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# HYGEIA

## THE HEALTH MAGAZINE

*Published by the American Medical Association*

*May, 1930* *25 Cents*

*Health, the Biggest Business* *The Letter from Home*

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**were fed on**

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*Published by the American Medical Association*
*Edited by Morris Fishbein, M.D.*

VOLUME 8 — MAY, 1930 — NUMBER 5

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## *Contributors to This Issue*

JOHN CLARENCE FUNK, who declares that business men are shrewd and sensible about everything except their own health, is director of the bureau of public health education of Pennsylvania.

RAY LYMAN WILBUR, as every one knows, is secretary of the interior. He has been president of Stanford University since 1916, a post he still holds. In addition he is a distinguished scientist; he was president of the American Medical Association in 1923-1924. The paper here published is his address before the recent meeting of the National Education Association.

Dentists as well as doctors are stressing prevention. ESTHER SCHUPACK, D.D.S., tells mothers and fathers how to avoid trouble with the children's teeth. DR. HERMAN GOODMAN, eastern skin specialist, has frequently written for HYGEIA on the health of the skin and hair.

COL. EDWARD L. MUNSON has had a distinguished career in military medicine. Background for his Philippine story was gained during several periods of residence in the Islands, for two of which he was adviser to the Philippine government in hygiene and sanitation. Among other varied activities, Col. Munson was assistant to the surgeon-general of the army in training medical officers during the World War; has invented several articles of equipment used in the army, and has written numerous books.

DR. THEODORE DILLER'S specialty is neurology, but he has also dug deep into medical history. "The Gullible Human Race" was presented recently as a lecture before a meeting of physicians. DR. RACHEL ASH will be remembered for "Overtired Children" in the January HYGEIA.

DR. FRANK D. DICKSON, orthopedic surgeon, and HENRY S. CURTIS, director of physical education in the public schools of Missouri, present a plan for teaching school children how to reduce the number of crippled children in the future.

Himself an urologist, DR. PHILIP S. ROSENBLUM speaks on the danger of neglecting a slight symptom.

DR. P. BROOKE BLAND'S article concludes the series on cancer conducted by an eastern medical society. MILDRED DILLISTIN is a public health worker. LOUISE PORTER, who wrote the playlet on posture, is a student at the Emma Willard School in Troy, N. Y.


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# Broadcasting Bunk

## An Editorial

THE STORY of the development of radio broadcasting in this country reveals as sad a spectacle as is to be found in all the applications of governmental control to any of the features of modern life, not excepting prohibition and Volsteadism. Legislation is constantly some twenty-five to fifty years behind the discoveries of modern science and their application in daily life. When commercial broadcasting was first launched on the air, radio loudspeakers spewed forth the very dregs of nostrum, patent medicine, real estate, blue sky stock, and similar promotions.

In course of time the radio broadcasters themselves sickened at the filth that passed over the air. The association of broadcasters began to control, through their own organization, some of the material offered to them for dissemination. When the Federal Radio Commission was organized it found a chaotic situation. Numerous individual stations had been licensed, some wholly for commercial purposes. Other stations were controlled by great newspapers, by public utilities, or by manufacturers of various products.

THE LEGISLATION by which the Federal Radio Commission operates does not give it absolute powers. The commission does control the granting of licenses and it can, for cause, revoke a license. In the meantime the radio industry found it expedient to organize great chains, which really dominate the air during the periods they are in operation. It is difficult for individual stations to make themselves heard at the same time; even more important, however, the class of material offered over the chain is far superior in most instances because of the higher prices paid for entertainment and educational features. Thus only a limited number of people are likely to listen to features developed locally. Today most of the material coming into the home over the air is fairly sound from the point of view of truth; fairly safe from the point of view of preventing harm to the listener through trusting his health or his money or even his soul to some blue sky promotion in any of these fields; fairly nice from the point of view of morals, and fairly esthetic from the point of view of entertainment.

In a few spots over the United States local stations continue to pour forth filth and falsehood. In the obscure Kansas village of Milford, a blatant quack, one John R. Brinkley,[1] whose professional record reeks with charlatanism of the crudest type, has for some years been demonstrating the commercial possibilities of goat-gland grafting for alleged sexual rejuvenation. Brinkley's educational history is as shady as his professional record. He has claimed two diplomas from Kansas City, Mo., schools—or alleged schools—one of them that was not recognized by the licensing boards of most states in the Union and long out of existence, and the other a notorious diploma mill. In one case he submitted as documentary evidence of his alleged attendance at an educational institution a document that was later shown to have been sold to Brinkley by an individual who declared, under oath, that the certificate was issued for a cash consideration without any examination and, although dated 1913, was actually sold several years later. On the basis of one of his diplomas, Brinkley obtained a license from the eclectic board of Arkansas—a board that figured largely in the diploma mill scandal—and, on the basis of the Arkansas license, obtained a license from Kansas by reciprocity.

BRINKLEY HAS BEEN ARRESTED, found guilty and sentenced to pay a fine and go to prison for selling "booze" and maintaining a public nuisance. He escaped the jail sentence and fine by being paroled by the judge of the Eighth Judicial District! Brinkley has been indicted in California for conspiring to violate the medical laws of that state, but escaped extradition because Governor Davis of Kansas refused to honor the requisition. Brinkley obtained an honorary degree from the Royal University of Pavia through unlimited effrontery. The degree was later annulled, but Brinkley continued to publish the statement that he

1. Complete reprints of material on the Brinkley and Hoxey quackery will be sent gratis to any one requesting it and accompanying the request with a stamped, addressed envelop.

was a "graduate, Royal University of Pavia." With unblushing impudence, he wrote the American Medical Association asking that his graduation-listing in the American Medical Directory be changed to show that he was a graduate of the Royal University of Pavia and not of the Kansas City outfit.

Brinkley, over his own broadcasting station, attempts to attract listeners by the kind of salacious innuendo concerning his methods that has brought millions to publishers of salacious periodicals. Far better might the United States Senate have concerned itself with such matters, than with its insistence that inspectors at our ports prevent the entrance into this country of Rabelais, Candide, or even the Decameron. At least the purchasers of those books know what they are getting, but in any home in the Southwest, the radio may snort into the family circle the news that Brinkley has reawakened the dormant sex desire of some ancient derelict by transplanting some goat glands. More recently Brinkley has extended his commercialization of medicine—via Station KFKB of Milford, Kansas —by prescribing for his unseen audience, and then entering into a financial arrangement with druggists whose professional standards are, apparently, as low as his own.

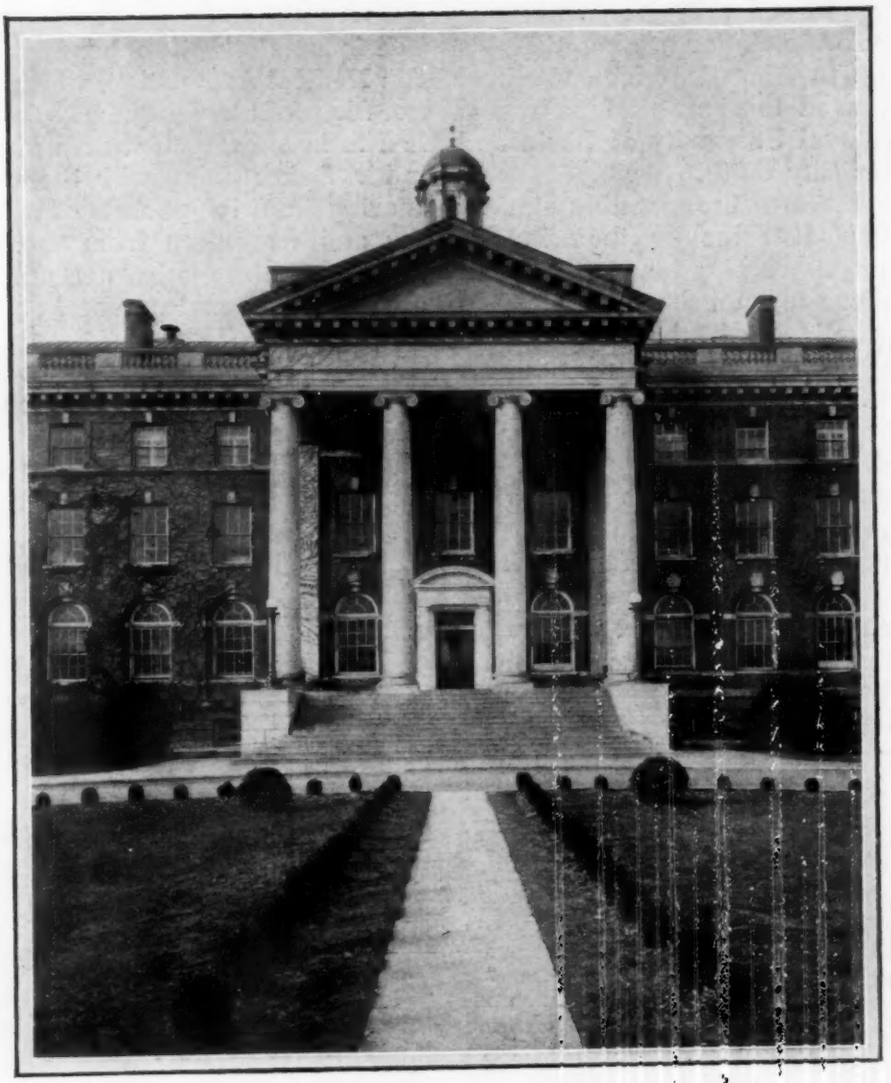
IN IOWA AT MUSCATINE, over Station KTNT, broadcasts a business man named Baker who is selling a cancer cure, with cigars and a cheap magazine as side lines. His cancer cure includes the old Hoxsey [1] fake, originally promoted in Illinois, and apparently now resident also in Iowa. This nostrum for cancer is boomed by Mr. Baker over his radio station KTNT, which can be heard almost anywhere after 11 p. m. This is exceedingly proper since it is the time of night when many devious and doubtful ventures are promoted. Over his privately controlled station Baker indulges in a repetition of much of the scandalous insinuation that proprietary manufacturers used back in 1905 when they first attempted to hinder the battle of the American Medical Association against medical fraud.

Baker has even claimed that the American Medical Association offered him one million dollars for his cancer cure with the intent of forcing it from the market so that patients might be compelled to resort to surgery for the saving of their lives. The lie is so obviously false to any person with intelligence above that of a moron that it needs little thought to convince his hearers of its fallacy. Even if the American Medical Association had a loose million dollars lying around ready to be spent, it is quite certain that a number of better ways for spending it would occur to the trustees who are responsible for the funds of the Association. The income and the expenditures of the American Medical Association, which is a corporation not for profit, are regularly recorded and testified to by a competent firm of auditors. What is Mr. Baker doing with the money that he is snaring from the pockets of sufferers with cancer and wheedling from the funds of chiropractors, naturopaths, nostrum promoters and other medical malcontents?

THE VICIOUSNESS of Mr. Baker's broadcasting lies not in what he says about the American Medical Association but in the fact that he induces sufferers from cancer who might have some chance for their lives, if seen early and properly treated, to resort to his nostrum. The method can result in Muscatine, Iowa, as it did in Taylorville, Illinois—merely in death certificates signed by the physicians who have been so poor in finances and in morals as to sell their birthrights to Mr. Baker for his mess of garbage.

Every radio communication sent out is broadcast at the risk of the transmitting station. Its programs cannot lawfully be censored. The programs that have been broadcast may be used, however, in determining whether the station is one that is serving the public interest, convenience or necessity. No license can be issued by the Federal Radio Commission in the first instance until the Commission has determined that the station will serve the ends named. At any time while a license is in force, the Commission may require from the licensee written statements of fact to show whether the station is or is not still serving those ends. If such statements reveal conditions that would warrant the Commission in refusing to grant a license on an original application, the license may be revoked. It is primarily the public interest and necessity that the law seeks to protect. It is to the Federal Radio Commission that the public must look for protection.

If the Federal Radio Commission wants to merit public confidence it must find some way to curb this type of broadcasting. If the association of broadcasters wants to retain public respect it must assure the public that the average home will be protected against this type of promotion over what should be a safe means of education and entertainment. If the states of Iowa and Kansas cannot protect surrounding states against this effluvium which emanates from within their borders, they are indeed to be pitied for their weakness and condemned for their crime against the great American public.



# TEMPLES OF HEALING

## VIII. Walter Reed General Hospital, Washington, D. C.

# HEALTH the Biggest Business

By John Clarence Funk

*Hundreds of prosperous business men imagine they can break all the laws of health and yet escape punishment. But they can't outwit nature.*

A MAN of 42 who had made a spectacular success in the electrical business recently came into the office of his general manager and suddenly collapsed. When the doctor arrived he found a young executive who within ten minutes had stepped down from a high business plane to the low level of "a nervous breakdown."

From last reports, six months or a year will be required to put him on his feet again. In the meantime his commercial activities, which depend a great deal upon his personal initiative and judgment, will suffer; and he himself will be the subject of a discipline much to his distaste. Nevertheless, this is the price he must pay for failing to realize that health, and not electrical accessories, is the most important business on earth.

Strangely enough, this progressive manufacturer was not unmindful of his workers' welfare. Rest rooms, gymnasium and ball ground had all been supplied at his suggestion. He believed that such things made for efficiency, and he was quite right about it. As for himself, however, he worked thirteen hours out of the twenty-four, habitually ate more than was good for him, smoked decidedly too much, invariably slept as little as possible, and exercised not at all. Combined, these personal derelictions eventually threw him down on his back.

Like many another busy man he had failed to appreciate that Nature, long suffering and amazingly flexible as she is, also has her limits; and that when she says stop, she most emphatically means it—a successful business man to the contrary notwithstanding.

Judging from unmistakable evidence, hundreds of prosperous men somehow imagine that they enjoy a privileged immunity against the infractions of fundamental living habits. And this unjustifiable conclusion, perhaps more than any other one factor, is responsible for the premature breaking of so many of them.

For instance, not long ago a prominent wholesaler, known in his neighborhood for his remarkable memory, died. At the time of his death he was only 51 years old. Yet for the fifteen years prior to his decease he had so forgotten the sensible method of living as to eat food sufficient for three average men, to supplant his legs with a motor car, and to average only six hours sleep each night. It followed as a natural result that he forgot to live.

On the other hand, it is quite true that many men of affairs conscientiously display a positive interest in their physical welfare. They logically realize that with shattered nerves or an impaired physical economy they would be compelled immediately to relinquish their commanding positions. Consequently, while they make a notable success of business they also make an outstanding one of living. Even so, it seems that there should be many more thousands of like mind than now exist.

### *Hard Work Alone Does Not Bring Success*

Undoubtedly, the majority of this country's business men know that their success has not been based upon hard work alone. They well realize that vitality of mind and body has also been responsible for it. However, what so many of them apparently forget is that vitality is not a perpetual motion affair.

As an example of this point, one finds instances of bed manufacturers who use beds as little as anybody; producers of health foods who regularly eat anything and everything until their capacity fails; jobbers of gymnasium equipment whose personal experience is limited to an infrequent stroll over the golf course, and resort hotel men whose fresh air is obtained only when they retire to their rooms at night. And so the story goes.

*Don't forget your muscles are made for daily use. Why supplant your legs with a motor car? Try walking to work.*

Just the other week a prominent midwestern broker was the recipient of large quantities of flowers. But he was at a decided disadvantage regarding them. Just a year ago he was vigorously urged by one of his friends to submit to a physical examination merely as a matter of routine. "Nothing wrong with me. Never get sick. Not borrowing trouble. And what is more, have no time to bother," he boastfully replied. Nevertheless, this keen man unfortunately erred in every particular. Something *was* wrong with him at the time. He *was* actually sick. Trouble had already taken possession of him. And not having time to bother, he now has neither time nor bother. According to the doctor's report, it was a little matter of the heart. Forewarned by the examination, he conceivably could be alive today. Brains and time for business, but none for health!

### *A Good Business Habit*

Admittedly, heart disease, cancer and diabetes have no proper place in the business man's program. However, these enemies to health and life have in the past repeatedly demonstrated their intense affection for members of this class. As a matter of statistical fact, a staggering number of business men have been knocked down and forever out by these afflictions which, by the way, are increasing.

"This situation could literally be changed over night," recently remarked a medical director of a large insurance company. "If business men would only use the simple expedient of the annual physical examination, many deaths now occurring could be definitely deferred. Early diagnosis is the secret in combating many conditions that insidiously gain headway and kill." Which seems plainly to indicate that the periodic health examination is a mighty good habit to form from a business point of view. You simply cheat yourself when you put off the time when you seek medical aid.

Last week a prominent merchant was observed eating his luncheon at his club. "That misguided man," remarked a physician at the next table, "is unconsciously engaged in the grave-digging trade. He thinks dry goods are his main concern. But he's wrong. It's food. And he is gradually being killed by it."

If a recent statistical study may be relied upon, nearly two-thirds of the more prosperous men in the United States today are too fond of food. And this, despite the established fact that overstock in provender is just as dangerous a condition as is overstock in business.

And when it comes to sleep—well, a few outstanding leaders have managed to thrive upon a small amount of it. But this is no good reason for the average business man to put himself in their class. Indeed, it is highly, and sometimes fatally presumptuous to do so. It must be remembered that sleep was invented long before dollars; it demands and always will demand precedence over them.

Said the head of a state health department when this subject was lately under discussion, "The individual who fails to obtain adequate rest each night is overestimating his capacities and is headed for physical bankruptcy." Rather a poor business proposition!

A merchant who in his early days was accustomed to walk to business now has altogether ceased this practice. In so doing he is denying his body of one of its most important requirements. He forgets that muscles were made for daily use and, being consistently unused, a price has to be paid for this neglect. He is paying it today.

*He thinks dry goods are his main concern, but he's wrong. It is food.*

What should vitally interest the business man is the high cost of sickness—the payment that disease exacts from him in lessened efficiency, loss of earning power and shortened life.

"The business man who refuses to exercise the body moderately is turning his back upon one of the most delightful methods of attaining and maintaining physical well being," recently remarked a surgeon of a large industrial plant at a convention of steel executives. And that surgeon knew what he was talking about.

Commerce is indeed a marvelous adventure. Business, large or small, is a fascinating game. But health tops the list in importance. Despite the great mergers and international financing so commonplace today, the gentle art of proper, healthy, lengthy and joyful living remains, as it always has been, absolutely the biggest business on earth. Therefore, it would appear to be good business, no matter how busy, always to remember this fundamental fact.

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# Refrigerating Systems and Public Health

REFRIGERATING systems are operated with the use of chemicals that constitute both a fire hazard and a health hazard. To regulate them so that they may be used with safety, cities have been compelled to enact strict legislation. Dr. Shirley W. Wynne and Dr. John Oberwager of the New York city department of health, in a recent issue of *The Journal* of the American Medical Association, discuss the laws in force in New York and present certain recommendations for additional legislation.

Permits are required for all systems containing more than 20 pounds of refrigerant and certain refrigerants may be used only in systems of a certain capacity. Sulphur dioxide, methyl chloride, ethyl chloride or hydrocarbon refrigerants may not be used in large systems with a capacity of more than 1,000 pounds. Most small plants use sulphur dioxide, while about 20 per cent use ammonia, methyl chloride or some of the hydrocarbons.

All rooms containing refrigerating machinery must have windows opening to the air or some mechanical means of removing impure air from the room. Such rooms should be segregated from other parts of a building and must have self-closing, vapor tight doors, the New York law provides.

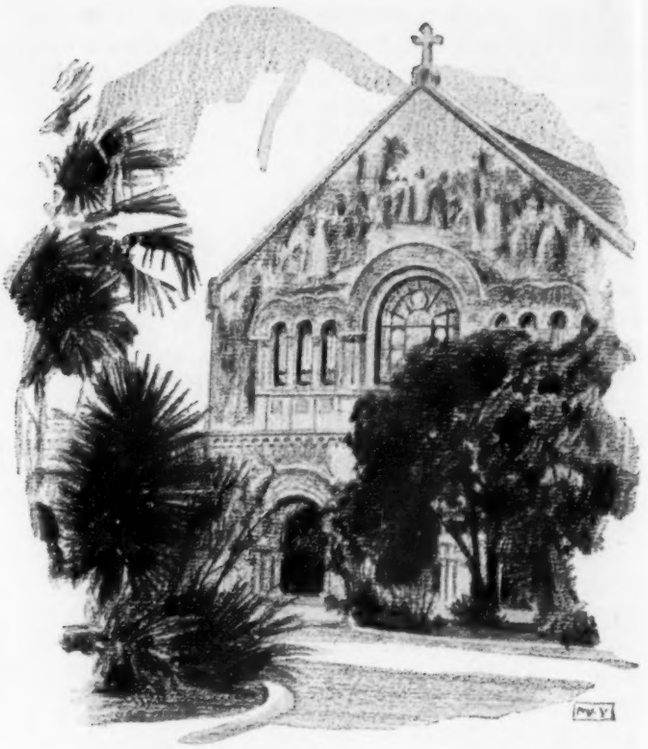
The recommendations proposed by the health officials have to do with household units, which are not adequately supervised under the present code, they assert. These units are reasonably safe, but unless the rooms in which they are located are properly ventilated and segregated there is danger that the refrigerant may percolate through other rooms in cases of defective systems.

Methyl chloride has been responsible for the greater number of the deaths from refrigerants that have been reported. This is not due to any greater hazard from this gas than from other refrigerants, but to the fact that methyl chloride has a slight and rather pleasing odor that would not awaken a sleeping person and might not be noticed by one who was awake, as would an irritant such as ammonia or sulphur dioxide.

# *Future Needs in* Education

By

Ray Lyman Wilbur



*A sketch of the beautiful chapel at Stanford University. The author of this article is both president of Stanford and Secretary of the Interior in the Hoover cabinet.*

IF WE would look forward into the future, perhaps we can best see what are some of the prospects before us by taking a look back. We need not go far back, say fifty years. If we try to comprehend all that has been accomplished through the training of man, through study and research, in the last fifty years, and if we visualize in addition the discoveries that have been brought into service in our civilization, we are conscious of a sense of shock as we look ahead wondering what the next fifty years will bring.

I need not enumerate the changes that have taken place. You in your own lifetimes have been conscious of most of them. There is a tendency on the part of all to consider things as somewhat finished at the point at which we are today. When I studied history as a boy, I was greatly surprised to find in my history book a picture of the president of the United States who was then in office. History seemed to be something that had gone before. To realize that history is in the making and that mankind is on the move was a new conception to me as a boy. But we must think of our advance as that of a steady, flowing stream.

### *Human Being Changes Little*

There is, however, one unit that is being carried forward on that stream which has comparatively little chance for change. That unit is the human being. We can change his environment, as we have done. But how much can we change him? Think for a minute of our great athletic program; of all that we do in that direction in America for the youth of the land. Yet no one could say that we have developed any stronger man than was Samson, any greater runners than those of the marathon. We have not improved the human body to any great degree. And when we consider the mind of man, certainly we cannot claim that we have any very great advantage over Solomon in the matter of wisdom, or that any greater philosophers have developed than grew up among the Greeks, or that any greater moral leaders have ever appeared than those of ages that have gone by.

Christ developed in an atmosphere that we would consider almost abhorrent in our modern sanitary civilization. Yet he created a method of living, a philosophy, a moral code that has never been excelled and that is still the best guide we have.

### *Progress Has Been in Mass Action*

We must face the fact that we ourselves have molded our environment but that as individuals we are not capable of changing so very much our own capacities or abilities. The only direction in which we seem to have advanced is in mass action. We have given much wider scope and training to great masses of men in all parts of the world. Instead of the favored few, we now have in such a democracy as ours the favored many. We offer them all whatever opportunities they may need to go forward by self-advancement. The limits of our universe are set by the limits of the human mind. With new ideas and with new truths we are constantly breaking down the barriers that surround us. With the microscope, the telescope, the test tube and all the other appurtenances of the laboratory we have opened up new zones in which the human mind can entertain itself and in which it can bring about advancement.

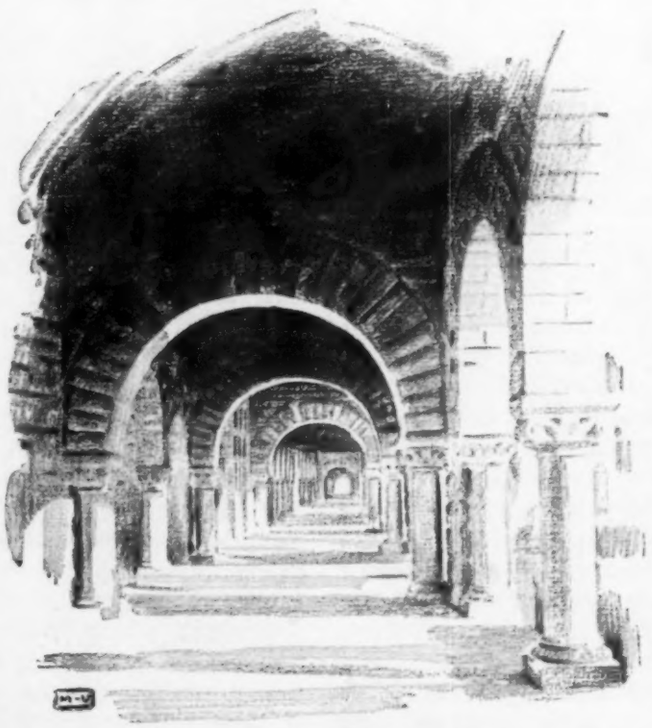
Did you ever stop to think that it would have been just as easy for the surgeons in Caesar's army to have seen the broken bones of the soldiers as it is for the surgeons in our army today? The only thing that they lacked was a man like Roentgen, who could bring together the proper contrivances of glass and steel and wire and chemicals and vacuum to make the x-ray possible. The x-ray has always been in the world. Roentgen simply made it usable.

The same is true of all of these new inventions. Solomon could have had his temple lighted with electricity if Edison had come before Solomon's time. The universal laws that control Nature, that are here about us, do not change. We discover them and our success in handling our environment depends entirely upon our capacity to use these laws and to get in harmony with them. We can in no way defy them with success.

### *When We Have Bred Up to the Bread Line*

We have stumbled along in the history of the race, multiplying in numbers, gradually covering this great globe upon which we are living, until there are more of us today than ever before; and more are coming, largely because of our capacity to develop and increase our food supply. There is no good reason for believing that the numbers of men will decrease materially until we have bred right up to the bread line. In the long run if there is food and opportunity, the children come along in one country as in another.

Along with this increase in numbers and this increase in knowledge has come the development of certain kinds of governmental procedures. The king is passing off the stage. Democracy, with its leadership of various sorts, is taking his place. At the present time we see three great groups of continental peoples struggling forward with somewhat different ideals and ideas. We, with Canada, represent one such group. The mass here on this continent is more or less unified by similar ideals, standards, methods and wealth in trying to work out democracy along one line. Russia, with its control of a great continental area that covers large parts of both Asia and Europe, is another. There they are trying to work out a great program on somewhat different lines. In fact, one of the great contests in the world today is to determine which method works best with human beings, ours or theirs. Watching that contest is another great group in China, with its hundreds of millions of people just emerging from under the clouds of tradition and superstition, with standards shifting in every direction. They are wondering which is the best method, that of the United States and Canada or that of Russia, for the development of those great masses of human beings as they struggle for more power, more happiness, more room.



*Another familiar view of Stanford University.*

### *Harmonizing Science and Democracy*

We must think in large terms as we view these questions. We must be conscious of our own individual limitations, conscious of the universal laws that control us, critical and careful of the things we do, for we are now in the age of science and democracy. Science! Think what science has brought to us in public health, in personality, in welfare, in industry, and in the series of services it renders.

Then think of democracy and its spread over the world at the present time. The great question for educators is: Can we harmonize science and democracy? Democracy works by majority rule in one form or in another. It makes decisions through individual opinions expressed at the ballot box. A majority decides whether one course or another should be carried out. But the decisions of a majority in a democracy have no weight in science. Science has no majority rule. Science has only one rule —the truth, the universal laws controlling this universe.

How can we harmonize these two? Some of our attempts at harmony are rather grotesque. I remember a law that was presented to one of our state legislatures. In fact, it passed one of the branches of the legislature. It told in fine legal terms just what symptoms a cow should show when she had tuberculosis. Just what the cow should do when infected by the bacillus of tuberculosis was laid down in the law ready for the governor to sign. It was a splendid law, but it had two great defects. One was, it

was difficult to get its import over to the cow. The second was, it was even more difficult to get it over to the bacillus. Yet those living forces, the cow and the bacillus, determine what the symptoms are regardless of any legislature or governor or majority decision.

You can legislate your heads off but you can't change the laws of physics in regard to a single little drop of water. You can legislate that a drop of water when put on the red hot stove shall stay round. It doesn't; it goes into steam and there is nothing that can be done about it by any human being.

How can we harmonize science with democracy? This is the greatest question before educators. There is a place for political decisions. We are now watching in our own country the attempt to settle by majority vote, by legislation, a great series of problems that cannot be settled that way. They can be settled only by the expert, not by the voter, not by his representatives, if they are to be settled right.

There is a zone in which democracy can operate. But there are many zones in which democracy cannot operate except through the expert. The problem of the educator is to insert the expert into democracy. Out of that combination will come success. A failure to bring about that combination means failure for us all, because we are so large in the mass that if we make mistakes, they are mass mistakes and as such they can be more damaging than ever before in the history of man, at least in volume.

The expert is trained by the experimental method. The experimental method tries to find out, knowing that if the truth is touched any one else going through the process can touch it again. Electricity does not change its rules with the changes in political administration. It goes on just the same. Nor can the experts that control electricity change their methods in handling electricity because of a change in political administration. Yet electricity, steam and all these various things are the forces through which we are building up civilization.

### *In Danger of Becoming Menagerie Animals*

Through science we are at the same time learning more and more about ourselves. I need not review here the great advances that have been made in public health and in personal health. You know how one by one, through the skill and patience and curiosity of men, men specially trained have been able to drive out certain diseases from our community. We know more about nutrition, we know more about the care of the young. In this process of developing all these procedures we are at the same time developing a new shell for ourselves. That shell is made up of steel and concrete and pavement and wires and artificial ventilation and artificial lighting—a whole series of new things in our environment.

We are, in fact, if we are not careful, in danger of becoming mere menagerie animals, caged, captured by ourselves. For we drive out of this environment the trees, the flowers, the birds, the grass, the open spaces, the things that have always made life and happiness for the human being. And if we make ourselves mere menagerie animals, no matter how well we may understand nutrition, no matter how well we may handle ourselves under such conditions, well—you know what happens to a menagerie animal. It doesn't breed well, it doesn't have vigor, it has too much leisure, it loafs, it wastes time, it gets fat, it is of no use in the long run in its biologic processes. That is the thing we face. Are we going to become of no use through the very environment we ourselves build up? Are we going to be crushed by our own machine? Are these concrete walls and these steel girders coming down on us? That is the question that we must face as educators. What must we do to meet these issues? Personality is the greatest thing we have. But in the mass, with democracy, with the controls of science, personality has an ever more difficult time to express itself.

### *Must Seek for Genius*

In the mass, as we educate these great groups, taking in everybody, personality is pushed down in the picture more and more; and yet we must seek for personality. We must seek for genius, or the leadership by the expert may fail us.

Out of these rising tides of masses, with people representing everything in our high schools, we must segregate those who can go farther to good advantage. Democracy doesn't mean that everybody has an equal brain and an equal body. They have only an equal chance. So we have to think in terms of selection, of segregation, if you please, of human qualities, as we go forward in this process, or we may lose everything in the mass.

How shall we find, control and develop these personalities? What is personality? We hardly know. We know it when we see it, and we know that it is getting more difficult for personality to express itself except in the old ways of a beautiful piece of sculpture or a beautiful picture or a poem or a song or a piece of literature. It is more difficult for personality to inject itself into our political life. The rules we have invented have become so predominant that personality must often mold itself to them. We must struggle all the time to see what we can do to uphold the dignity of the human being as such.

One of the most interesting experiments in the American school system since its very inception has been the struggle to keep religion out and get character development in. We have kept religion out for political reasons. Opportunities to follow great moral leaders are kept out of the

schools because what those moral leaders have presented comes to us in the form of religion. We have to get some substitutes. Are we succeeding with it? Isn't that one of the big questions before us in this age of science and democracy? Are we keeping personality and character development as we go on training our youth?

We have to be very careful not to become the prey of superstition, savagery and prejudice. The easiest thing we turn on is prejudice. You turn it on when somebody of a different race comes along, somebody from a different city; prejudice is turned on like a flash of electricity in the presence of other things. It is so easy to turn prejudice on. When you turn it on, you join the crowd. You are no longer thinking, you are simply an emotional being. Your intellect has stopped. Yet in the world that turning on of prejudices controls great elections and the relationships of nations.

*The Department of the Interior building at Washington, D. C.*

### *Superstition in Our Thinking*

What are we doing about superstition? It is around us everywhere. I think we must take the attitude of the colored mule driver who said, "When I has anything to say to a mule, I says it to his face." We must look this thing in the face and realize that these superstitions and prejudices play a large part in the things we do. They are inculcated in such subtle ways. When riding along in the automobile, even of the university president, if something is said about new tires, some one may remark, "We haven't had a puncture for six months," and then he looks around to find wood to knock on. He could just as well have put his hand up to his head.

Superstition is in our thinking. It is an undercurrent, and it is important for us to eliminate that from the child's developing personality. We cannot wisely in this age decide what we do by superstition or by prejudice if we are to maintain safe relationships with these great universal laws that control us.

What about the future of education in such a democracy as this? I wonder if we ever have looked our education squarely in the face to see whether our methods are all that they might be. When we tried our methods of schooling upon the American Indian, we made a colossal fizzle of it. We have been at it for fifty years, and if the Indian has improved under this educational treatment, it is hard for a new Secretary of Interior to find it out. We did not adapt what we have. What did we do in the Philippines? We took our kind of schooling, gave it a Spanish flavor—a little tabasco sauce—and tried to put it into the mind of the Filipino. It has made a fine politician out of him, but how good a prospective citizen of the Philippine Islands?

If those things are true of other peoples, and I think they are in a certain measure, how are we succeeding in the things that we are doing with the American boy and girl? How much have we analyzed our job? How much time are we wasting? We pace the American schools at the speed of the lower half instead of pacing them at least with the upper 25 per cent and then putting those who cannot go at that rate in a position in which they can do the work that is given them and be happy. We keep in our schools and universities a large percentage of students who are unhappy, unsatisfied, unproductive and not doing their work because it is not in tune with their mental capacities. We know that. You all know that. But there is some absurd superstition that democracy means all must do the same thing. We follow that superstition and thus inject expense and waste and unhappiness into our educational system clear through to the top.

### *Segregating Students by Ability*

Segregation of ability is one of our responsibilities. Then what shall our method be? Shall it be the same as we have had in the past? We are making a little attempt now to see whether we are as smart as the Chinese. The Chinese have set up a mass education program to cure illiteracy in China. They have worked out a simple system so that for a comparatively few cents they can bring an adult up to the point where he can read a simple newspaper that probably has more in it than any one needs to read. Can we do the same thing here if we want to for our adult illiterates? We are trying to find out whether perhaps there are not new methods that may be applied to stimulate ambi-

tion and desire so that with just a little light, more will be sought.

I think that methods can be discovered to help us in the problem and that some of them may well be taken into the school system. You know our trouble is that when once we have built a machine we like to operate it. We build the school machine and then we like to operate it. When I went in as a young university president and suggested some change in a machine that was only twenty odd years old, some of the older members of the faculty looked on me more as a curse or a blight than as a help. I was proposing to change something that they had built up. Most of us as we grow older become fearful of change.

Walter Camp, the great coach, said to me one day, "The other day I was standing on the sidelines where my son was playing in the same position that I used to play in the football team. I saw him come charging down toward me with the ball under his arm and three big fellows running out to grab him. I just shivered. Then I realized that that boy was having the time of his life as I did at that age. He was crashing forward. He wanted to strike these people and get just as much distance forward as he could, and I knew that my bones were old. That is why I was fearful."

### *Must Not Allow Education to Crystallize*

In our educational system we put in the struts and the supports, and then a lot of people spend all their time watching them to see that nobody takes them out or substitutes others. The educational machine isn't a machine. It is a flow of forces constantly changing—new people, new children, new ideas, always on the move. The one thing that it must not do is crystallize. If it crystallizes, then democracy with its education gets out of tune with science.

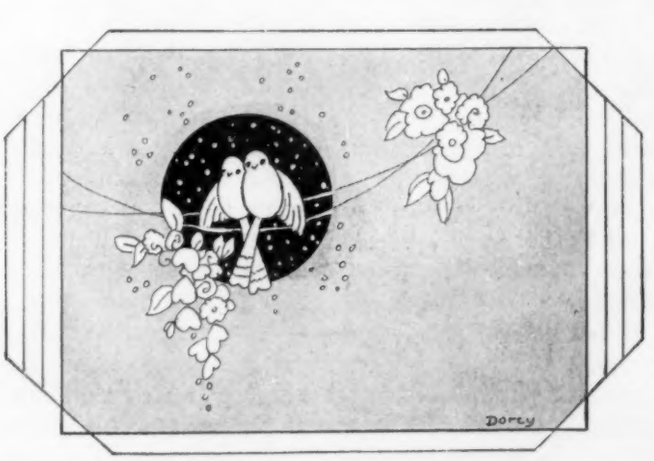
Have we enough knowledge and understanding and elasticity so that we can go forward into the future with comfort and safety? One of our great aims in education has been to groove the mind of the youth so that the old currents would flow easily through that mind, percolating out perhaps more or less from those main currents. Tradition is the thing we have talked about and insisted on. The college undergraduate catches it from us until he is worse on tradition than we are. Yet we do not know what is coming in the next fifty years. We look back at the last fifty, and we know that the boys and girls of today must have the most elastic minds imaginable if they are to meet with success the challenges of the world of tomorrow.

### *Keeping the Mind Plastic*

We must seek an educational training, not so much in specific things, as a training adapted to the individual for the development of his personality. We should freely exercise his mind so that it will not become grooved but will remain plastic. We must drive out superstition and prejudice that are such blighting forces and bring in opportunity for growth, so that growth will continue as long as is possible in the development of every individual. Nature, with its processes of developing changes in the blood vessels, will develop senility soon enough. We must do what we can to prevent presenility by the educational procedures we adopt.

The basis of our advance is research—new things, new ideas. The degree of achievement we make will depend upon how many able minds are turned loose to bring us new information. Our success will depend upon our capacity to bring home to all the things that these men give us in the fields of research.

If we, with this combination of democracy and science, are to win, then the educator must be ever alert to see that those whom he trains keep personality, develop character, remain open minded, avoid superstitions. Only in that way can we improve this political machine of ours, now creaking and grinding, trying to solve by votes things that cannot be determined in that way. This great machine of ours may go down with a crash unless it has that kind of leadership.



# WHAT EVERY MOTHER SHOULD KNOW ABOUT A CHILD'S TEETH

*By*
*Esther Schupack*

H. Armstrong Roberts

*Give the child intelligent care of the mouth in the formative years, and much agony and unhappiness from bad teeth will be avoided in later years through the major period of existence.*

WOMEN who would not neglect their own teeth often ignore the needs of their children's teeth. Nature discards the baby teeth anyway, they argue, so why bother about them? The naïve idea that diseased teeth in younger children require no treatment does immense harm to children's health.

Pus pockets surrounding the teeth in a child's mouth set up foci of infection just as they do in adults. There is growing concern about the prevalence of heart disease in children. Child specialists now believe that the so-called growing pains—aches of the joints—result from infections. Bacteria from diseased teeth pass by way of the blood to lodge in the vital organs and joints and thus undermine the whole system.

Another calamity is the irresponsible way in which uninformed parents, after neglecting the child's mouth, complacently view an extraction of the diseased teeth. It is not generally appreciated that the baby teeth stand guard over the positions to be taken by the permanent teeth and guide the second set into place.

The teeth behind a vacant space in the arch tilt forward as if the jaw were contracting. When the newcomers erupt from the jaw bone their rightful position has disappeared. They turn, twist and lean in order to find a place in the mouth. Instead of an unbroken line of pearly whiteness, the lips part upon a disorganized and disfiguring array.

Nature has planned for the first teeth to last until a certain age, because health and digestion require them. A child who has been cheated out of their use loses some measure of this natural aid to perfect growth and development.

Unwise extraction of teeth is not the only cause of malformed jaws. Sometimes a youngster is discovered to have one jaw smaller than the other. The lower juts beyond the upper or recedes behind it. Proper mastication is, of course, impossible and the face lacks the accepted standards of beauty.

These are sometimes cases of mixed inheritance. The small jaw comes from one ancestral line and the large jaw from another. Modern dental technic through a specialty known as orthodontia—the straightening of teeth—makes it possible to reform the jaw. The smaller arch

is widened by slowly moving the teeth, one by one, into correct positions.

Faulty alinement of the teeth, either through inheritance or premature extractions, should have the early attention of the dentist. The age at which reconstruction should begin is so varied that no rule can be stated. But by all means a dentist should be consulted before the child reaches the age of 14. Delay until after 21 makes attempts to reshape the ranking of the teeth inadvisable, because of the denser bone tissue and the unyielding nature of the sockets in an adult.

Orthodontic treatment requires the periodic service of the dentist from several months to several years depending on the age of the child and the positions of the teeth. It is futile to begin this work unless the parent and child are willing to give the dentist continuous cooperation and patiently to await results.

### *The Six Year Molars*

A most distressing oversight frequently occurs in the lack of attention given the six year molars. Orthodontia may restore twisted teeth to their natural beauty and utility but once a permanent tooth is gone nothing can really replace it. Artificial teeth may look well but they do not have the natural anchorage in the bone nor can they give the service of one's own.

A child's mouth is small. It accommodates only twenty teeth, five on each side of the center in the upper and lower jaws. These teeth are all temporary and make way for permanent successors. Some time after the age of 5 the first permanent molar begins to appear behind each series of five. The parents have outlived their preoccupation with the coming of the child's teeth as incidents of major importance and the molars erupt unnoticed.

Soon cavities may appear and the mother, dominated by the idea that these are temporary teeth that need no attention, permits caries, or decay, to spread deeply. A visit to the dentist reveals the necessity for removing the molar or the nerve.

Thus the child, early in life, begins to lose teeth that are necessary for digestion and facial beauty through the rest of his existence.

Other baneful effects, involving orthodontic treatment, arise from the extraction of the six year molars. When a tooth is removed the one above it or below it grows longer. It tends to occupy the space of the missing tooth. In chewing each tooth strikes against two in the opposite jaw. When the neighbor of the extracted tooth erupts against the elongated one, the system of masticating surfaces is thrown out of line as the opposing teeth attempt to accommodate themselves to each other.

When the teeth are not facing properly, openings are formed between the teeth, which encourage the collection of food débris. This makes it more difficult to keep the mouth clean.

Children usually first make the dentist's acquaintance when their mouths are sensitive with pain and they are consequently supicious of everything said and done to them. Mothers should plan to make the child's introduction to the dentist a painless one. When the first discoloration appears on the baby's teeth, he should have the sympathetic, gentle attention of the cleaning brushes in the hands of the dentist. The sensation often tickles children and the mechanical scrubbing, followed by a pleasant mouth wash, establishes a friendly relationship between the child and the dentist. A visit every six months cements friendship and confidence.

Should the painful ministrations of the dentist be required, the child is ready to believe that an effort is being made to help and not to add further hurt.

Lying to a child is the way of failure. If one has a child's confidence, he can be soothed into patient and stoical endurance of temporary suffering. Tell a trusting child that the additional pain is necessary to end all the aching, and the child will be a Trojan.

Parents are careless about discussing their dental aches and pains in the presence of children. Nine out of ten who rebel fiercely at a necessary visit to the dentist for treatment are in a state of fear because of scraps of conversation overheard in the family circle.

On the surface this is a mere detail of family discipline and restraint, but it has far more serious consequences. When the mother is baffled about the child's lack of interest in food, when baby complains that this cereal is too hard and that fruit is too sour, when the daily natural routine is out of tune and the stomach is in distress, this is the time to recall that a mouth alive with agony may have something to do with these disturbances.

### *May Conceal Pain through Fear*

A dull ache in the mouth makes eating uncomfortable and the child whose fears impel him to dodge the dentist keeps mum about the pain. The sudden carrying of the hand to the face, restlessness at night, crying in sleep and a rise in temperature are some of the symptoms of a hidden toothache. It often happens that the mother is unaware of her child's trouble until the sudden onset of intense suffering makes further concealment impossible.

A child who has learned to meet the dentist without misgiving or mistrust will confide his distress at the first pang, when aid to a diseased tooth will not require drastic treatment.

Children's teeth are so small that the pulp chambers containing the nerves and vital tissues occupy a much larger proportion of the whole than in the teeth of the adult. The layers of

enamel and dentine are thinner and the blood vessels much nearer to the surface. It is therefore important that small cavities be treated and filled immediately before the decay reaches the pulp. The tiny crevices in the surface of the tooth can be discovered only through periodic visits to the dentist. By the time children's teeth reach the aching stage, it may be too late to save them.

The desirability of eating coarse foods which exercise the teeth has frequently been stressed for adults. The practice is more beneficial for children because food habits that are not easily broken are thus formed. There is a physical pleasure in eating stuff that really needs vigorous chewing but this cannot be done with an afflicted mouth. Once children develop idiosyncrasies against certain foods it is troublesome to restore normal eating habits. The reluctance to chew persists long after the original cause has disappeared.

Mothers show unnecessary concern about the hugeness of the successors to the milk teeth. The first teeth fit the size of the child's mouth. While the face and jaws grow, teeth do not. They appear in the mouth permanently fixed in size and shape.

As the second set replaces the baby teeth they appear enormous in contrast with such first teeth as have not yet been discarded. The tooth that made way for its permanent successor did not leave width enough for the larger growth, so the newcomer twists and tilts. As the jaw expands in development the space increases and the tongue and lips adjust the tooth to its proper position. With the development of adult features the face assumes its proper relation to the teeth and they no longer look immense.

Give the child intelligent care in the formative years, and young men and women will be saved much agony and unhappiness from bad teeth through the major period of existence.

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# Poisonings from Silver Polish

CYANIDE poisoning from silver polish used in hotels and restaurants is blamed for a series of cases of acute abdominal disturbance reviewed by Dr. Huntington Williams in a recent issue of *The Journal* of the American Medical Association.

In June, 1928, about thirty persons attending a convention dinner in Utica, N. Y., became acutely ill a few hours after the dinner. It was thought at first that the illness was food poisoning. When a physician investigated he could find no evidence of spoiled or contaminated food, but when passing through a pantry he noticed the odor of prussic acid in a powder silver polish. It was later determined that this powder contained 20.54 per cent of sodium cyanide. Through insufficient rinsing traces of the polish had remained on the utensils and in such spots as the spouts of teapots, it was believed.

### *Symptoms Noted*

The victims suffered severe nausea, acute abdominal cramps and extreme prostration. The attacks lasted several hours and the weakness for several days. The sufferers were regarded as critically ill and one woman believed she was dying.

Through its weekly bulletin the New York state health department issued warnings to the public, describing the illness. Then physicians and other persons who had seen or experienced similar attacks began to investigate. Many of the attacks had occurred in widely separated hotels. One woman whose work required constant traveling had had twelve attacks at hotels in various cities. Inquiry revealed that the deadly silver polish was being used in every place.

### *Hotels Did Not Know of Danger*

Managers of hotels were in practically all cases delighted to learn of a probable cause for these baffling illnesses of which they had had so many complaints. The dangerous material was promptly eliminated and certain hotels reported a prompt and permanent cessation of complaints of this type from the guests served in their dining rooms.

Many hotels and restaurants were using the polish containing a deadly poison without knowing of the danger because the package labels bore no poison sign. As a result of these striking cases New York state then required the manufacturer to place the word "Poison" in red ink on all containers sold in New York state.

In June, 1929, the city of Newark, N. J., placed a ban on the use in that city of any poisonous chemical used for the cleaning of silverware or utensils used for food. The following November New York state added to its sanitary code a regulation prohibiting the use in any public eating place of any polish containing cyanide or other poison for the cleaning of any utensil used in the preparation or service of food.

# The Problem of Excess Hair

## *Is Discussed by Herman Goodman*

MODERN human beings vary in the amount of hair they possess and in the way it grows. Most of us come into the world with the promise of a good crop of hair on the scalp and with eyebrows and eyelashes. The face of the adolescent boy evidences beard and mustache, but the girl who shows such signs is not happy. It is with the problem of hair on the face of the girl and woman that the skin specialist deals.

All parts of the skin, except the palms, soles and the back of the terminal phalanx of the fingers and toes, offer the possibility of hair growth. It should be easy to consider then that activity of such potential hair growth may mean actual hairiness of the whole body. Instances of such excessive hair are encountered in the circus and side show. Any part of the body may have an excess growth of hair. Such growth on the face produces the freak known as the dog-faced boy. Sometimes the growth takes on the distribution of a bathing suit and justifies the use of the term "bathing suit" in its description.

What causes this hairiness? The life history of the race may be a satisfactory explanation, and the life history of the individual may also partly explain general or local hairiness, for it is accepted that we are covered with hair during a part of our prenatal life. The factor of heredity has been offered to account for the unwanted hair on special locations. Many tables are presented to show that parents and offspring for a number of generations have evidenced excessive growth of hair in identical locations.

The growth of unwanted hair in women is influenced by their sex life. Thus some women show hair growth during pregnancy, and many women acquire excess hair at the menopause. In experimental animals, the secondary sex characteristics of the male appear in altered females.

Hair growth sometimes follows injury to a nerve. Hairs occur in birthmarks, and certain tumors have hairs as component parts of the growth.

The immediate concern of this article is with those persons whose skin shows a fine downy growth varying from a hardly noticeable color to more or less heavy pigmentation. The upper lip may have this down slightly accentuated. This is a minor defect which ought not to be considered a blemish since the downy growth is essential to the peachlike outer skin of the most prized beauty. The growth of hair may not be so mild, however. Stiff, dark hair rivaling the beard of the male in location, rapidity of growth and stiffness may appear. Every grade between may be recognized.

Hair on the arms and legs is considered a blemish, and the hair under the arm is considered superfluous. The eyebrows and eyelashes given us by Nature as our birthright do not always meet social approval, and styles in eyebrows change as do those in gowns.

Bristles from the nose and ears are also doomed, as are the stiff projections among the soft, pliant eyebrows.

The removal of hair was a religious rite for centuries. With us it is a social convention. Yet the removal of hair is not solely a cosmetic procedure; the surgeon, for example, would welcome a good hair remover to clear fields of operation. Modern business men and women need cosmetic aid to meet the requirements of the period in their search for social and business advancement.

Hair removers are permanent and temporary. As far back as 1875, Dr. Michel, an eye specialist of St. Louis, proposed the use of the galvanic current for the removal of hair. He did one operation about the eye. Dr. Hardaway, a skin specialist, was the first to make use of the galvanic current in cosmetic removal of hair.

The actual technic has varied but little since the method was first introduced more than fifty years ago. Certain changes have been made; for example, some operators prefer multiple needles instead of one needle. The apparatus used in the multiple needle method is not mechanically correct since there is no absolute way of controlling the current through the various needles. The only needles which can be used in the multiple needle apparatus have a very short active electrode. Some girl operators become expert with multiple needle machines. A new form of apparatus has been designed that makes it possible to control the current so that the patient does not get the full force through the first needle introduced, and then have it diminished with each succeeding needle.

The source of the current has varied with the years. The dry cell and the radio battery furnish galvanic current. The alternating current is useless for hair removal unless the operator has either a rotary convertor to convert alternating to direct current or a motor generator set. As with every other procedure in human endeavor, the mere possession of the apparatus, does not fit the possessor to use it. The galvanic current for hair removal is not altogether free from dangers, although these dangers are slight. If the polarity of the apparatus is reversed, for example, the current deposits the steel of the needle into the skin, acting for all the world like a permanent tattoo. The trained operator tests the polarity each time she uses the apparatus, as a porter or some apprentice may have been at the machine since she last used it.

The galvanic current method entails a special, separate operation for each hair to be removed. The needle must be accurately introduced into the hair follicle for the proper length. The introduction must be absolutely right. The current flow must be regulated as to intensity—enough to do the work and not enough to hurt.

The tedious nature of galvanic removal of unwanted hair has made the search for a more rapid method attractive.

Physicians who work with the x-ray hold that no machine or modification of a machine for x-ray can cause the permanent removal of the hair by the destructive effect of the x-ray on living cells without at the same time so-altering the cells as to cause unhappy results. Despite this accurate statement of the case, the x-ray has been used for the removal of unwanted hair by the unscrupulous. The very evidence of success in permanently removing the hair by x-rays is at once the proof of death of special tissue cells. The effect of this death of the tissue cells about the hair is dryness of the skin, thinning and the appearance of enlarged blood vessels. Later signs of the destructive effect of the x-ray are ulcer and possibly skin cancer.

Despite all this, the advertising columns of certain city papers and magazines contain notices which flatter the vanity of persons with unwanted hair and which promise relief without danger by use of the x-ray or modified x-ray. Clinics and the offices of dermatologists are receiving an increasing number of persons who have been so misguided as to have superfluous hair removed by this means. The patient is unwarned. The effects are unmistakable and are practically beyond relief. Courts have repeatedly awarded damages to the victims of this fraud, but, to date, no one has collected money damages for the affliction.

In England the health ministry refuses to permit those who seek to use the x-ray method of removing hair to set up in business. In New York City, the department of health has collected cases of bad results from a limited number of operators. The department now requires a permit for the use of any x-ray apparatus. This requirement deters the ignorant from renting a machine and spreading injuries caused by ignorance.

In my opinion, the only excuse for the use of the x-rays for the attempt at permanent destruction of unwanted hair is with the full realization of the possible dangers in those few persons who have become so obsessed with the distaste for the unseemly hair as to be on the verge of complete mental upset.

The temporary removal of hair may be accomplished by actually plucking each hair, using the fingers or tweezers. The method is tedious and somewhat painful, and the regrowth is said to be stronger and darker than the old. This statement of a stronger and darker regrowth of plucked hairs has never been investigated as far as I know. Nearly all the women who come to the skin specialist for excess hair removal report that they have been plucking out the hairs for varying periods, and those with dark, heavy growth of hair always put the blame on their efforts.

Wholesale plucking, or so it might be termed, may be accomplished by the application of various liquids and waxes which are applied warm to the parts. The substances harden and the hairs are caught. Then the hard mask is pulled off, and the hairs come away. There is no reason for any optimism as to permanent removal of hair by this method. The hair does grow again. I have had a number of women

tell me that repeated use of depilatory wax has resulted in less hair. On the other hand, I have as many patients who report failure of the method.

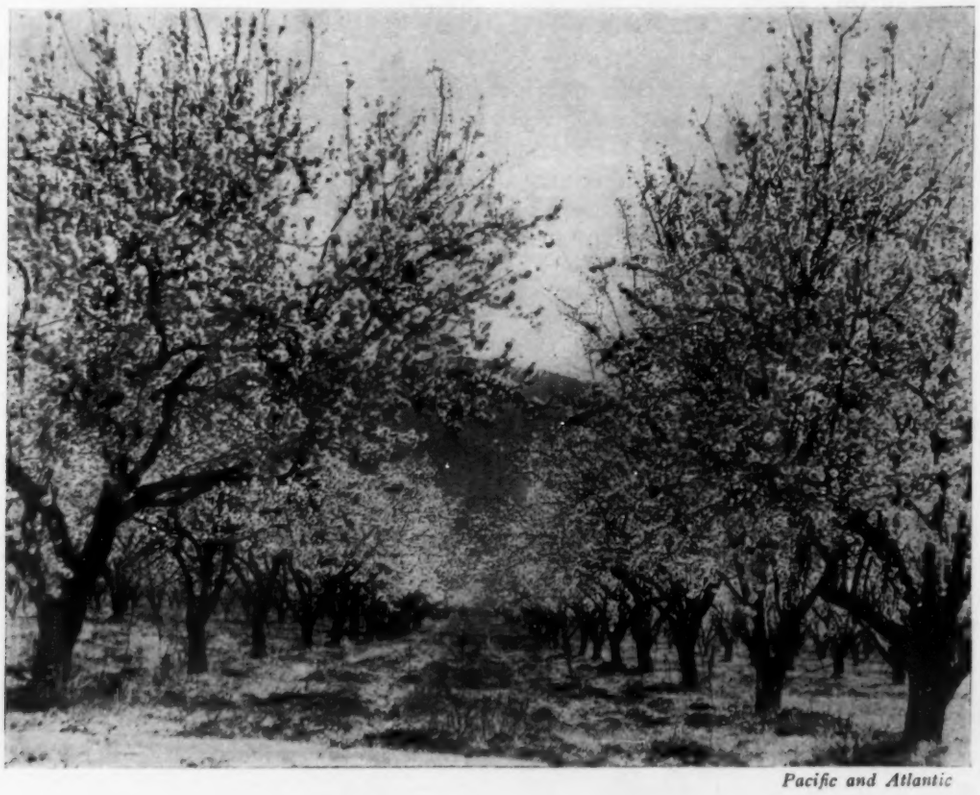
The razor is suggested for the temporary removal of unwanted hair. Many women use the razor for removing the hair under the arm. Others shave hair from the legs or the forearms. Recent investigators hold that the use of the razor does not increase the rapidity of growth, encourage the bristly character of the hairs or add to the pigmentation.

A popular form of hair remover is the chemical depilatory. The efficacy of this type depends on the chemical interaction of some form of sulphide and the horny material of the hair. This chemical combination takes place at room or outside body temperature and requires a comparatively short time. The actual chemistry of the interaction has not been determined, probably because the structure of the hair is so complex chemically. My examinations have been limited to the physical changes, and I have noted a swelling of the hair and a dispersion of the layers.

Chemical hair removers are best made by specialists who have the opportunity of testing the primary ingredients. The manufacture of chemical depilatories is tricky. The formulas which are to be found are worthless for the most part. In this connection I must quote Prof. Curt P. Wimmer, who has taught cosmetics for many years to manufacturing cosmeticians. Prof. Wimmer says that if you find a published formula it is not a good one. To my own knowledge, this is true of depilatories. If the formula is a proper one and if the material can be made, it does not remove the hair properly. The man who publishes the formula probably has never tried it and is unable to give explicit directions. The odor of sulphide, which is the active ingredient of the chemical depilatory containing sulphide, is objectionable. Most manufacturers add perfume in an attempt to disguise it. The sulphide depilatory must be applied with a wooden spatula because of the chemical action of the sulphide on metal.

A depilatory freshly made or recently released from the factory after seasoning is designed to act within ten minutes. It should not be forgotten that the horny substance of the hair and the outermost layer of the skin are of the same or similar composition. The horn-destroying action of the sulphide hair remover can also act on the skin. An inflammation of the skin on the site of application of the depilatory is not unusual unless proper care is taken. This implies that the chemical be removed within the time stated on the package and that the surface of the skin be massaged or covered with some bland ointment or oil to prevent development of any irritation.

There is apparently no internal treatment possible for the permanent removal of unwanted hair. The only safe measure for the permanent removal of unwanted hair is the use of negative galvanic current applied to each hair separately by a trained operator. X-rays should not be used in any form. There is a choice of temporary hair removers. Which one is selected depends on the person and the judgment of his medical adviser.



*Pacific and Atlantic*

# The LETTER from HOME

By Edward L. Munson

*"I have a letter from home. The university wants me as professor."*

CHOLERA! A new outbreak of cholera after the battle had seemed won! Day before yesterday, peace and security. Yesterday thirty cases. Today sixty. Tomorrow?

The rain poured down steadily. The rain, the damnable rain. The rain whose floods swept the infection of cholera into the wells and watercourses. A leaden murk lay over the world like a shroud.

Dr. White stood up and walked slowly toward the jalousied windows.

Drip. Drip. Rain. Day after day, week after week, interminable, unendurable. It wore away the nerves like steady blows of little hammers. Under it, resolution seemed to crumble and disappear. It was ceaseless, maddening.

A mawkish reek rose from the muddy street. A carromata slithered its way below, the *cochero* urging his pony with bestial cries.

Dr. White drew a long, unsteady breath. There on his desk was a letter from home. Home! The place where people understood. Where life flowed placidly in ordered channels. Life and ideals that were his own. Ideals—that had clustered 'round as he packed his trunk. His trunk! He could smile now when he thought of its packing. Textbooks first. Then an overcoat, added by New England caution. That unpacked overcoat, rotten with mold! It was mute witness to changed standards.

He came back slowly to his desk. In the dank heat, patches of slimy fungus blotched themselves, leprous-like, on the white walls of the health department office. He looked at them with repulsion, then sat down heavily, facing his assistant.

"I thought we'd ended this cholera business at last, Newcome," he said wearily. And his eyes went down to his desk and to the letter from home. Beside it was today's report. Sixty cases!

"I thought so too, sir," Dr. Newcome agreed. He looked at his chief almost pityingly. The whitened hair, the care-seamed face—they were the outward scars of altruism. "If these people would only do as we tell them!" He threw up his hand. "The cases are scattered all over Manila. What shall we do about it?"

"I've a letter from home," said Dr. White irrelevantly. "The university wants me. A professorship at double the salary here—doing the work I've always wanted to do."

"You're going to accept, sir?" The assistant was troubled. They two had stood together against the forces of ignorance.

Dr. White reached out a gaunt hand and turned over the letter from home. Turned it gently, caressingly. Beyond, he seemed to see stately buildings, arching elms, eager students, friends to appreciate—the wrinkled mother who missed her boy. "I should be foolish not to," he said slowly.

Then he straightened. "But I'm still here. And cholera doesn't wait! Such an outbreak has a common source. Find it."

He watched the door close behind Dr. Newcome. Cholera! The terrifying word seemed to leap at him from every corner. Cholera!

Spread throughout the islands, it had killed by myriads. Whole districts had been decimated. In deserted villages, mangy curs and starving swine had worked their will on unburied dead.

Cholera! A medieval Christianity taught that its scourging was retribution for sin. To the pagan tribes what was it but the machination of evil spirits? Among the fierce Mohammedan groups it was the will of Allah, and attempts to thwart it were worse than useless. And he must set his puny strength against them once again, must see science flouted, the obvious unnoticed, purpose vilified. And to what end? The Philippines would remain the same—the same always and forever!

Dr. White's face twisted in a bitter smile. They had chosen him to bring order out of age-old chaos, and he had come in the spirit of a sanitary crusader. Here would be a chance to benefit humanity. There would be problems, of course, but had he not solved such riddles before? Their very novelty would enhance their interest.

His untried zeal had visioned an earnest people seeking guidance, eager to take the ways of life that he would show. Trained in the ideals of his calling, he would be satisfied with nothing less. All this in a setting of blue skies and seas, waving palms, brilliant blossoms.

Then disillusionment had come. Had come gradually, insidiously. Had come as he pitted himself against the ages. Was irresistible. The tropic sun sapped strength and resolution. Habitations, so picturesque afar, were foul to nearby sight and smell. Colorful groups affronted sanitation, and death penalized their fault. Verdure sprouted from decay. Nature strewed prolific life, then turned to its destruction. The beautiful and the squalid, unremarked, stood side by side. Things moved themselves in ordained alien ways.

And those for whom he fought opposed him most. The tribes and races kept their ancient course. Textbooks? Instead, he learned to study people and learned how best to compromise. Each day brought its struggle. What was the good of it all? Each battle seemed new, with no wisdom from former struggles.

He glanced at the letter on his desk. Why did he hesitate? He had given his best for an alien race, given it without stint or measure. He had earned his right to ease and happiness. Let some one else carry on!

He reached for his pen and drew paper toward him.

When he left for luncheon, his letter of acceptance was written. He would mail it in the afternoon.

Dr. Newcome was waiting when he returned. "We haven't found the cause," he told his chief. "But—but—something's up! Since the earthquake a few days ago, the people have been flocking to Tondo beach. Today there's a crowd of them, so the inspector says. I told him to find out what it's all about."

"Better see for ourselves," Dr. White put in, dryly. There were few to be trusted. "Come. We'll go there together." He buttoned his raincoat.

The pony cart trundled away from the office. Hemming the narrow streets of the Walled City, the massive homes of the Spanish colony showed poor repair—decadence, as in the twilight of an ancient glory. Bare walls, massive doors and barred windows shut away the life within. Above the splashing rain a piano sounded tinnily—a señorita singing. Then cloisters and churches. Cowled monks, chanting. Beyond an open door a black figure vaguely stretched its feeble candle toward a niched saint.

"That reminds me of a night when I was new to the islands—young like you," Dr. White said suddenly, out of the silence. "We were fighting cholera in a provincial town. The water was infected and people died like flies. We buried the dead in the mats on which they died. They died too fast for us to make them coffins. When the ox-carts made their rounds, the bodies were stacked on them like logs." His voice was wooden, monotonous.

"What about the epidemic?" Dr. Newcome asked, interestedly. His chief was a man of strange experiences.

"Oh, we did the usual things." Dr. White passed a gaunt hand across his forehead. "One night I woke up suddenly. The whole town seemed to be passing toward the church on the plaza. At midnight, the bell tolled. Lights flickered in the distance—then they came together and filled the street. In front was a sandaled padre, and acolytes with swinging censers. Then came a band, playing the Miserere—and people with their votive candles. Sacred images, flashing with jewels, swayed by on gilded floats. At every corner, the priest raised his crucifix and led the prayers of his kneeling flock that cholera might be taken from them." His eyes were thoughtful. "It was certainly impressive," he added, slowly.

"Did you stop the cholera?" the other persisted.

Dr. White smiled. "Well, perhaps it had reached its peak. At any rate, it waned rapidly. The people gave the credit to San Roque, their patron saint in cholera time." His smile twisted a little. "But that was all right. I myself told them to pray to San Roque and boil their water."

Dr. Newcome sighed. He was young, thought Dr. White. He still demanded perfection. Nice to be young and eager and—.

"Well, you'll be out of it all soon," said Dr. Newcome. His voice was a bit wistful. "I'll miss you, sir."

"And I'll miss you," said Dr. White, mechanically. He remembered that his acceptance had not been mailed. Oh, well, it didn't matter.

*Beyond was a milling throng, ankle deep in the mire. Men, women and children clustered about a pipe of earthenware. Over the rim water flowed sluggishly—the holy well of Tondo. Hopeful prayers ascended.*

There was plenty of time for it to catch the steamer home. Home!

Dr. Newcome was speaking again. "—— and the work will miss you, sir. Your experience—your knowledge of the people—."

Yes, that was one of the hard things—to leave the work and those who had stood beside him. He had learned much in a bitter school. Why could such knowledge not be left behind, where it was sorely needed? Well, it was not his fault. Those who followed must do as he had done, and learn for themselves. They would have to take the responsibility some day anyway.

The carromata jiggled through the gate in the ancient wall, under the rusty portcullis and time-worn arms of Spain, then over the stone bridge that spanned the river. A blast from the sea drove the rain slantwise until even the stream beneath was invisible.

The *cochero* swung his pony down into the Chinese quarter. Yellow men swarmed in stone buildings like rats in burrows. Little shops, counterparts in size and contents, ranked side by side endlessly. Through the murk, dim lights showed figures busied with strange vocations. Somewhere gongs clashed, and a thin flute wailed dismally. Over all, the pervasive stench of Asia.

"Not much cholera among the Chinos," remarked Dr. Newcome. "Drinking their water boiled as tea is what saves them." There was no answer.

The pony cart slipped through into the district of Tondo, where the poorer people herded. Hovels, on bamboo stilts, raised themselves above the ooze and leaned against each other for support. Beneath, forlorn dogs and meditative swine sought shelter. Dejected fowls, perched above the slime, dried drabbled feathers. Partly opened shutters revealed sprawling, inert groups and here and there a vacant face that gazed apathetically at passers. Filth, sloth, indifference. Dr. White's glances missed none of them.

As the cart stopped, he swung out swiftly. "I wonder what we are up against now?" he said, and pulled down his hat brim.

Ahead lay Tondo beach. At high tide, nothing. Now the falling waters bared a vast expanse. A welter of muck and mire, the filth and flotsam of the Orient. Scuttling crabs scavenging repulsive slime. The odor of corruption and decay. Dead things.

Far out in the muck, thronging groups moved indistinctly in the drive of the rain.

"I wonder—," Dr. White said again.

Belatedly, Dr. Newcome answered. "God knows! Nothing these people do can surprise me any more." He called to a native hurrying outward. "Where are you going?" he asked.

"To the holy well of San Roque."

"Holy well?" Dr. White was perplexed. "What holy well?" he demanded.

The passer stopped. He held a bottle in the hand that pointed seaward. "It is a miracle of God," he answered. "Three days ago his *temblor* shook the earth. Then a spring of fresh water broke out here on the beach of Tondo, sent of heaven to protect from cholera. At the high waters its freshness bubbles among the salt. But now it is bare. I go."

A sanitary inspector, with a native policeman, came up. "It is as that *hombre* says," he began. His brown hands gestured.

Dr. White snorted impatiently. "Follow us," he directed.

"Sir, they have a leader," the policeman said hesitatingly, as he splashed after.

Dr. White's lips tightened.

For a moment the rain slackened. Here and there drab old women, with tucked-up skirts, dabbled for shell-fish and little minnows stranded by the tide.

*Habitations, picturesque afar, were foul to nearby sight and smell. Verdure sprouted from decay.*

Beyond was a milling throng, ankle deep in the mire. Men, women and children clustered about a pipe of earthenware. One end was buried in the beach. Over the rim water flowed sluggishly. The holy well of Tondo!

From it some were dipping, drinking, gargling, laving hands and faces. Some filled bottles and moved away. Others, patient, waited their turn to reach the precious fountain. Awe, reverence, hope were mirrored in their faces. Through the falling rain the murmuring of prayers ascended.

Dr. White moved forward slowly. His face was grave. He looked at the spring—then scanned the distant shore. Took a glass from a woman and dipped it in the water. Held it against the dim light. Smelled it. Then turned and faced the crowd.

"This spring is closed," he said, simply. "No water may be taken from it. The policeman will see that this order is obeyed."

The crowd stared at him sullenly. There were people whose garments showed that they came from distant places, with diverse dialects. "Tell them what I said," Dr. White ordered, and the inspector spoke in the native vernacular.

At his words, the groups moved a little, swayed uneasily. Here and there a figure slowly turned toward the shore. A woman, holding a child astride her hip, sobbed quietly. But most stood motionless, sullen. A whisper ran among them, angry, menacing. It grew. Swelled.

An old man, barefooted, hesitating, moved forward. The shirt loose over scarlet trousers, clinging with wetness, outlined the shrunken limbs beneath. Under the tray-shaped hat of matted *buri* leaves his seamed face shone with simple faith. He stretched out gnarled and calloused hands, palms toward heaven.

"Señor Médico," he said in halting Spanish. "I am Juan Suresa of Hagonoy, the village of fishers. It was evil in the sight of God, who sent the cholera to purge it. Of my friends and kindred have many died. To my *barrio* came yesterday word of this holy spring, which broke forth after the *temblor* of God shook the earth. One said that its waters are blessed of San Roque, who protects against cholera. Since darkness fell have I come more than ten leagues against the storm, to drink of the water, and to take it to my children and my children's children that the anger of God may be turned from them. Let me fill my bottle from the well—and go!"

These were the things that hurt, thought Dr. White. His face softened in pity and compassion. "I cannot let you," he said, gently. "Perhaps, after all, the well is not of San Roque."

"Is this the leader?" he asked.

The policeman shook his head. Before he could reply, a young man with pointed shoes and clothes tailored in white man's style turned to the crowd and broke into impassioned words in the local dialect. His arms moved in the flamboyant gestures of the native orator.

"There is the leader," said the policeman.

Dr. White stared at him curiously. "I seem to remember him," he said reflectively. "Newcome, who is that man?"

Dr. Newcome gave a dry chuckle. "I've spotted him," he said. "One of our inspectors for a while. Since his discharge I heard he had taken to politics for a living."

"I thought so." Dr. White's reply was hardly more than a grunt. He turned to the policeman.

"What is he saying?" he asked, evenly.

The latter hesitated an instant. "He says," he translated, "that his people had been conquered in battle, but that this is not enough for the white men. They still want to see the people die. They come now to take away the waters sent of San Roque to avert pestilence and sorrow." He added, lamely, "He says that you are but two and they are many—to let themselves be bold and take as they wish of the healing waters."

Dr. White strode suddenly toward the orator, pointing his finger. His words snapped out like bullets. "Stop your lying! Tell the truth—if you can!" The young man stopped. His eyes fell. He shrank back.

Dr. White turned again to the inspector. "Tell them that we do not wish to see them die. If the water is good, they may have it again. Tell them I fear it is sent by evil spirits, and I go to make sure that it is really the water of San Roque."

His eyes sought Dr. Newcome. "You stay here," he directed. "Get shovels, and dig out the spring-head." He shook his head sadly. "It'll astound you."

A sullen group of men stood in the way to shore. Some clutched their bottles club-wise. He faced the group squarely and moved forward. Muttering, a trifle puzzled, it opened for him to pass.

He glanced back from the carromata. The inspector was floundering ashore, going for men with shovels. In the distance, the policeman lolled, irresolute, beside the well. In front stood Dr. Newcome, erect, watchful. And to one side the crowd was moving sluggishly toward a young man who swung his arms. Then the rain came down like a curtain.

The ceaseless battle, ceaselessly repeated. So once he had stood, young and strong and ardent, pitted against the darkness. So other young men would stand, after Dr. Newcome. So the unequal fight would go on through the years.

The brown man with the swinging arms! Urging his people to strike the very hand that tried to help them!

Well, for him it was ended. A letter to be posted. Then this life, with its struggles and disappointments, would be shut away from him by the years just as the little scene on the shore had been shut away by the rain. A feeling of sadness came over him, a sense of the futility of things.

That sense of sadness grew as he lurched back through the sodden streets. To what purpose, all this struggle? Why not leave them the ways on which they seemed so bent? Yet, as he thought, there came a picture of calloused hands, palms up, raised in supplication. "Let me fill my bottle from the well—and go!"

He hung the raincoat on its hook and sat down at his desk. There lay his acceptance of a blessed release. He stared at it.

He was still staring when Dr. Newcome, drenched and breathless, entered hurriedly. "Well, we found it!" he called from the doorway. "What do you think it was? We dug down a couple of feet and found where the spring came from! The earthquake had broken the pipe and the water was bubbling up from the broken sewer of Tondo!"

"So I thought," said Dr. White quietly, and he reached over and picked up his letter. He weighed it in his hand thoughtfully. He saw Dr. Newcome standing on the shore unaided. He saw a figure waving its arms menacingly. A battle! The never ending battle of light against darkness. Then he saw a kindly old man, with worn hands—palms up.

He looked up at Dr. Newcome. And he smiled. "You know that offer I spoke to you about?" he said casually.

"Yes, sir."

"Here's my acceptance," said Dr. White, slowly. He tore the letter across and dropped the pieces in his waste-basket.

# The Gullible

By Theodore Diller

*A witch drawing milk from an ax-helve. (From "The Story of the Inquisition," Freethought Press.)*

THE question of human credulity can be approached in no better way than by some consideration of witchcraft and belief in the devil. These two beliefs are really inseparable.

For many centuries belief in the devil persisted; he was thought to place temptations and pitfalls in the way of human beings that they might succumb to him. The belief was general that many persons sold their souls to the devil and made compacts with him as illustrated in Goethe's Faust and Marlowe's Dr. Faustus. A witch, in the belief of the Middle Ages, was one who was in definite and active league with the devil. In his fascinating and illuminating book, "Intellectual Development of Europe," Lecky says nothing is so clearly proved by the concordant testimony of mankind as the existence of witchcraft.

Belief in witchcraft very likely grew out of beliefs prevalent in Europe, Asia Minor and Northern Africa many centuries before the Christian era. Many references to witches are to be found in the Bible. In Exodus 22: 18, Moses says: "Thou shalt not suffer a witch to live." By the time of Charlemagne, witchcraft had grown to such an extent that this great emperor placed a ban upon it. By the thirteenth century it had greatly developed, and for the next three centuries it was the generally accepted belief all over Europe. Four or five popes issued bulls against it, calling for the extermination of witches. One very cruel persecution, in Holland in the thirteenth century, followed the first of these bulls, whereby a whole section of country, after prolonged armed resistance, was practically exterminated on account of the practice of witchcraft.

The advent of the Protestant Reformation produced no effect on the belief in witchcraft, for it was accepted by all the great Protestant leaders, including Erasmus, Luther and John Calvin. Catholics and Protestants were at one in this belief. Before the Reformation, it was accepted by Albertus Magnus, Duns Scotus and St. Thomas Aquinas. Nor did physicians stand out against witchcraft, as instanced by that great medical teacher Paracelsus.

*Oath and water test at a witch trial. After a handbill of the year 1250. (Freethought Press.)*

It would be difficult to estimate the number of persons executed, after so-called trials, as witches; it would be conservative to say the number could not be less than 100,000. It appears convictions were more numerous in Germany and Scotland than in other countries. In a small diocese of Bamburg, Germany, something like 500 convictions are recorded in one year; and in a not far distant diocese of Wurtzburg, there were 900 convictions and executions in a single year. Although less numerous, convictions occurred in France, Sweden, Norway and England.

The search for and conviction of witches in Scotland was particularly keen. James VI, who afterward became James I of England, wrote a long legal dissertation on witchcraft in which

# Human Race

*Burning of witches in Durneburg, in 1555. (From "The Story of the Inquisition," Freethought Press.)*

he fully supported the belief in it and called for its extermination; it is to him that Scotland and England owed its laws against witches under which many trials, convictions and executions took place. After many years these laws were repealed, but the Scottish Kirk in its annual prayer officially lamented the repeal of this law.

But getting closer to our time when witchcraft was on the wane, we find that good, gentle physician, Sir Thomas Browne, so honored by our beloved Osler, sitting as a sort of expert witness at a witchcraft trial and testifying in favor of the reality of the evidence which called for condemnation of witches.

*Two witches make thunder and hail. After a woodcut of about the year 1489.*

The last execution of witches was made about 200 years ago. Since that time the belief in witches has steadily dwindled, but it has not entirely disappeared. We were reminded of witchcraft recently by the startling revelations made in York County, Pa., which involved a murder charge. In a recent book, Montague Summers, a scholarly clergyman of the Church of England, examines the matter in great detail and expresses his belief in the reality of witchcraft. But we need not be amazed when we find a man of great learning who holds bizarre beliefs. Swedenborg was a great scholar, and yet he published writings which revealed a truly surprising belief in the fantastic and supernatural. In our own day we sadly contemplate the distinguished physician, Sir Conan Doyle, and that great physicist, Sir Oliver Lodge, holding to a belief in spiritualism.

The belief in witches, briefly stated, is that there are certain persons who have sold themselves to the devil and who are altogether under his control. The devil is pictured as a person, dark in form, with cloven hoof, fiery eyes, hairy skin, and long tail. He manifests himself in many ways, taking the guise of a goat or a bird or a rabbit; but he was himself and through his imps manifest chiefly through the acts of witches whom he controlled.

Various misfortunes and calamities were frequently regarded as due to the agents of the devil. Witches frequently caused the milk to sour, prevented ewes from giving birth to their young, prevented crops from growing and precipitated storms and tempests. For instance, there is a record in Constance, Switzerland, of two witches who were accused, tried and executed for being the originators of a severe storm which did great damage to buildings and to the crops. Witches transported themselves quickly, riding on broomsticks, goats and sometimes on great fishes. They could go under doors and through keyholes.

The Witches' Sabbat or Sabbath, in which there was widespread belief, was an assemblage of witches under the guidance of the devil. It was attended by witches for miles around. At such meetings the devil would ask all witches what evil they had done, and any who reported insufficient amount were beaten or insulted by the devil. They sang songs, danced furiously and indulged in all sorts of sexual indecencies. With the dawn and the crowing of the cock, the Sabbat dispersed. One of the most notorious Sabbats recorded in history is the famous one

which assembled in the North Berwick Church, Scotland.

When we examine the evidence today, we are astonished to note on what flimsy grounds convictions took place. But when belief in witchcraft was most prevalent, acquittals were rare indeed. In many cases the accused confessed himself guilty of witchcraft, and there are cases on record in which certain persons came forward and proclaimed themselves to be witches. Witches were old and ugly, generally; and it is said that at one time in Germany, when convictions were plentiful, some women, as they grew older, committed suicide rather than run the risk of being accused of witchcraft. Convulsions and other marks of epilepsy and hysteria figured largely in trials of this kind.

Anything that was obscure, unusual or persistent in the way of disease, accident, misfortune, weather or crops was blamed on witchcraft. The belief apparently grew out of the fallacy, post hoc, ergo propter hoc—one of the ancient sources of error in medicine.

*The banquet on the Witches' Sabbat was only a part of the furious festivities that continued until the crowing of the cock. (From "The Devil in Britain and America.")*

Along with this widespread belief in witchcraft, it must be recalled, many other bizarre beliefs have persisted through the centuries; for instance necromancy, magic, the black art and astrology. That great and good woman, Catherine de Medici, kept a separate apartment for her astrologer in her palace.

Today on the boardwalk at Atlantic City there are a score of places which the passerby may enter for palm reading, fortune telling, crystal gazing and what-not. And we cannot escape the conclusion that men and women of today possess a mental life, emotional and intellectual, which is about like that of men and women of the fourteenth century. We know in part and believe in part—to paraphrase a verse in the Scriptures—and while knowledge has accumulated, there is still a vast field unknown, and so men and women today, as in past ages, believe where they cannot prove.

Since the breakup of a belief in witches, men have simply adopted beliefs in other systems. Men always will believe things apparently beyond their senses. The Christian religion, as well as the Mohammedan and Jewish, teaches belief in the supernatural; these teachings are generally accepted. Nor can we suppose, as many do, that the age of science in which we now live will entirely blot out this belief in the supernatural.

Sometimes there is as sharp a distinction between things that are known and things that are believed, as there is between daylight and darkness. But the distinction oftentimes is obscured and dimmed, and sometimes what is called knowledge should be called belief.

We find everywhere men and women of learning who hold beliefs that to others seem absurd, ridiculous or even dangerous. The view is generally accepted that the emotions are far deeper and more primitive than the intellect and that they influence conduct far more than the intellect; it may frequently be observed that a man will state an opinion that is nothing more than an expression of feeling.

The most learned man can know only a little of the vast sum of human knowledge and the most ignorant can apprehend only the slightest fragment of it. We are constantly called on to form opinions or beliefs based on second hand knowledge, and we are constantly taking things for granted. For instance, we start in an elevator, or on a railroad journey or ascend in an airplane, taking it for granted the machinery is working well and that the engineer or pilot is competent. We believe, but we do not know, our journey will go well. We believe in our friends and in financial institutions and various parties and organizations.

So it would appear that knowledge and beliefs go together, one beginning where the other ends; and the two are inseparable. Some depend more on knowledge and others more on belief. But it is common for all men to accept the belief that is prevalent in the age in which they live. Beliefs that now seem absurd and are everywhere rejected were at some period in the history of mankind received by every one.

Men desire three things ardently: (1) a sure and quick road to wealth; (2) a sure and quick road to health; (3) a sure and quick road to the kingdom of heaven. So we deceive ourselves and are deceived by others and deceive them. We need not concern ourselves with religion at this time only to say this—the physician has no quarrel with any religion that aids and comforts men. Indeed he is cooperative and sympathetic with it. He goes against that religion that goes against the interest and welfare of individuals or society as he sees it from the medical point of view. He is opposed to any religion that teaches that disease is not contagious or that disease and suffering do not exist.

The physician, like his patient, has indulged in countless numbers of beliefs regarding the theory and cure of disease which he has afterward abandoned. He is made of the same stuff of which other men are made. To be sure, his special training alters him; but really it changes him little as regards the great fundamentals of life. Possessed of an emotional and intellectual nature, he also struggles between the two.

### *Why the Quacks Flourish*

The physician's particular job being the conservation of health and the prevention and curing of disease, he must consider the man in his entirety—his body and his mind. Indeed it may be said that all diseases are mental or have a mental aspect, even such grossly organic ones as a fracture or a tumor. The widespread belief that there is a remedy for every disease has led men to search all parts of the world for drugs and remedies of all sorts. Following his usual bent, the physician attaches to various remedies a significance of which their material nature hardly permits.

Montaigne has well pointed out that it is the element of strangeness, rareness and bitterness that makes many remedies acceptable to the public. Therefore, procedures that are novel or unusual have always had a vogue. Things that are mysterious, such as electricity, x-rays, massage and sunlight make an appeal. So it happens in medicine, as in other fields of life, that we find ourselves confused with things that we know and things that we believe. It is the endeavor of the medical profession to add more and more to what we know and to subtract more and more what we believe.

Human beings are hopeful, ever hopeful. Orthodox medicine has many failures and oftentimes it is slow. People are impatient and leave it to go to those who administer immediately to their wants or who promise them what they desire—a cure. These they always can find and always have found. So it happens that orthodox medicine is shadowed and surrounded by a system of cults that promise that which orthodox medicine cannot and will not offer. Hence, human nature being such as it is and the limitations of human knowledge being such as they are, there is a steady and insistent demand for irregular practices. In other words, orthodox medicine cannot now and never will altogether satisfy the demands and hopes of those who are ill. Outside of orthodox medicine there will always be groups and systems that will promise the public what orthodox medicine cannot promise.

### *Eternal Warfare*

So, ever since the regular medical profession grew into being, there have been quacks and humbugs, absurd systems and cults. Witchcraft today has almost disappeared, but the cults are here; some dying out and some coming on, all strange, bizarre and novel. Each in its turn will make its appeal and fit in with some of the various groups and temperaments. Wherever truth stands, error will be found close by.

Medicine must always deal with things intangible as well as with those that are subject to the senses. So long as this is true, it will be subject to error, doubt and controversy; it will always fall short of doing completely that which it would desire to do. It will suffer because of too little and of too much belief on the part of physicians and patients alike. The most we can hope to do is to delimit and segregate quacks, humbugs and the various cults. There is eternal warfare between orthodoxy and heterodoxy in medicine as well as in religion.

*"Three birdes of a winge, and all abyding in the Towne of Gilsborough, did ride one night to Rauenstrop all upon a Sowes back." When accused of witchcraft they "stood stiffely upon their Innocence" but were executed. (From Ashton's "The Devil in Britain and America.")*

# Children's Parties -

By
Rachel Ash

*The house swarms with aunts and uncles putting up the paper streamers.*

CHILDREN'S parties, like the curly-haired heroine of nursery rhyme fame, when good may be very, very good but when they are bad they are horrid.

They are at their best when given by the older child able to take an active share in the preparations for the party, but at their worst when given for the tiny tot who has no proper understanding of the significance of the occasion and who is being more or less exploited to gratify certain cravings of his adult relatives.

### *Edward's Third Birthday*

Let us visualize such a party given, we shall assume, for young Edward, an only child whose parents have decided there must be a proper celebration of his third birthday. Colorful invitations have been sent to the children of friends of the family, most of whom Edward has never seen. For weeks his devoted parents have been making elaborate preparations. On the eventful morning the house swarms with aunts and uncles—putting up streamers, decorating the table, wrapping favors, hiding peanuts for a peanut hunt.

As for Edward he scarcely knows what to make of all the excitement. He watches the adults play with the fascinating pink paper and tries to tear strips as they do. Nor does he understand why the roll is snatched away rudely with the request that he run along and play with his new blocks. His blocks seem stupid in comparison with such nice crinkly paper. Mother even slapped his fingers once when he tore off the floating end of a gay streamer dangling from one corner of the dining room ceiling just as she was preparing to hand it to daddy to fasten to the chandelier. He becomes too excited to eat the early lunch prepared for him and cries when they wish him to take a nap.

"It must be that Ned's mother is spoiling the child," think all his father's relatives. But when he is dressed in his new linen suit with the exquisite hemstitched ruffles on the blouse no one can refrain from caressing him. Now, however, he is not permitted to play, not even with his new blocks, for his clothes must be immaculate when the company arrives.

Gradually the guests assemble—a heterogenous group, varying in age from 8 years to 18 months, dressed in their best bibs and tuckers and duly warned not to misbehave and not to soil their clothes. As a result of the great disproportion in their ages the attempt to find some type of game suitable for all is hopeless. The very little ones perversely wish to play by themselves, some even with Ned's birthday presents. Awkward scenes arise when Ned demands his own toys or when one child snatches a balloon from another. Later, at the beautifully decorated dining table mothers refrain from expressing unutterable thoughts as children spill ice cream on their new silk frocks or insist on overindulgence in the offered dainties. With the progress of the party youngsters become fatigued and tears are not uncommon.

### *An Unhappy Occasion*

There comes to my memory one boy, about 4 years old, who had been invited to the birthday party of a young neighbor. He lived at no great distance from his host and so his mother sent him to the party alone. So great was his difficulty in becoming adjusted to the unusual situation and so obvious his unhappiness that his sympathetic hostess kindly suggested the advisability of his return home. Eagerly he assented. On his way down the entrance steps

# Good and Bad

*Older children should help plan the details of their own parties.*

to the house he suddenly turned and reapproached his hostess. With traces of tears still visible on his face he gasped, "Please, I forgot to say thank you and I had a very nice time."

To a greater or less degree such is almost the universal reaction of a very young child to a formal party. It is the conviction of many persons versed in the problems of childhood that little children, too young to aid in the planning and preparation for parties, derive little pleasure from such entertainment and would be far happier were there no disturbance of their usual uneventful routine. Thrown into the company of strangers, they are expected to join in group games before they have as yet developed a group sense. They become fatigued by the unaccustomed excitement, and it is not surprising that derangement of disposition or health varying in duration or degree is a not infrequent result.

Ned, as did some of his guests, ended the day with a temper tantrum induced by fatigue and was scolded for being naughty. In at least one child nervous excitement brought on an attack of vomiting and diarrhea. Many of the youngsters were irritable and cranky for one or more days following the party.

### *Infections Spread Rapidly*

From the health point of view it is undesirable to bring into close proximity a group of children unaccustomed to each other's germs at an age when they are most susceptible to infection. The mildest sequel will be an upper respiratory infection or the common cold. The common cold, however, may not be an innocent infection, but may be the forerunner of a more serious ear or mastoid involvement and even at times of pneumonia or meningitis.

An epidemic of any of the so-called diseases of childhood may have its inception at a children's party. I know of at least one party every young participant in which developed measles. Measles with its possible serious complications is more dreaded by physicians than unfortunately it is by parents. It might as easily, however, have been the more popularly feared scarlet fever to which the children were unwittingly exposed.

When schooltime comes, contact with groups of strange youngsters is inevitable. By this time it is hoped the child will have acquired a greater capacity to fight disease. Before this period it scarcely seems profitable to take a possible serious risk for the dubious amount of pleasure involved.

### *A Sensible Party*

To the average person the important aspect of a party is the food served. With the usual frankness of childhood a little guest once blurted out this truth. "We have been here a whole hour," was her sudden plaintive remark after a period spent in games "and there hasn't been any party yet."

If one wishes to distinguish a little child's birthday it would seem logical to observe this essential feature without unusual fuss and solemn preparation. Bring in the few children with whom the child plays daily and serve an impromptu feast of vanilla ice cream and simple birthday cake. When the meal is finished, the children may play or depart as they wish.

Such a simple gathering brought together at short notice obviates the vicious features inherent in the bringing of birthday presents. A certain mother abruptly stopped giving parties to her daughter when on her sixth birthday she greeted the first arrivals with the question "What did you bring me?" and when later in the afternoon she wished to send home a little playmate who had failed to bring any-

thing. This child had been given an elaborate celebration annually since her first birthday. Every year each little guest had brought gifts and it was logical that this characteristic of previous parties should have made a deep impression upon her.

Some mothers attempt to avoid the formation of such selfish tendencies by having their children provide simple presents for their guests at some slight sacrifice to themselves and by forbidding the presentation of elaborate gifts.

With older children, able to choose their guests and to help plan the details of a party, the situation is distinctly different. These youngsters should be encouraged to give an occasional party. Especially should they be expected to help prepare decorations and evolve a unified scheme of entertainment. Such activity will aid in the development of their creative sense and will be an invaluable introduction to the handling of more formidable affairs in the future.

Children should obtain experience in the reception of guests before the difficult era of midadolescent self-consciousness is reached. The gracious handling of visitors so that no one will feel neglected and unhappy is a gift that can rarely be acquired suddenly but is best attained by the accumulation of experiences begun in childhood.

Many adults would be indignant at the thought that their child's birthday party ultimately has been given for their own gratification, not for that of the child. Yet such is frequently the case. Ned's party served only to procure for his parents some degree of esthetic and creative pleasure. For Ned it was merely an event associated with an unwholesome degree of excitement.

A tiny child is happier if he is not forced into the artificial atmosphere of a group of strangers. The best sort of party for a very small child, therefore, is no party at all. If some celebration is unavoidable let it be a simple informal affair, preferably outdoors, at which the children are permitted to play spontaneously—alone if they wish. There should be no attempt at the elaborate serving of food.

An older child should be encouraged to give and to attend parties provided they do not become too numerous. But do not make such a party an occasion for demonstrating your own superior skill in planning and in entertaining. Encourage the child to offer suggestions and assistance; and accept as much as possible of both even though the resultant product may not be as finished in appearance. Do not humiliatingly emphasize your youngster's deficiencies in manners. Tactfully substitute the proper remark or action. The average child is keen enough to take the hint.

Above all, if the party is given simply to satisfy a desire for social glory without taking into consideration the child's needs, it is of no value. The probabilities are that it will afford genuine pleasure to no one concerned.

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# TO MY MOTHER

*By Sara Henderson Hay*

This I remember—being very small
Against the bosom of so great a bed,
And quite content to make no move at all,
But lie and watch the drowsy firelight spread
In a long splash of gold along the floor
To the dark rafters and the tall dark door.

And I remember how the sudden rain
Shattered the silence of that brooding room
With frantic fingers on the window pane,
Till I was plunged in deep and monstrous gloom—
And there was nothing I had rather hear
Than your light hurried footstep drawing near!

And how I lay, and cowered in alarm,
And wept hot splashing tears; till suddenly
You came, and propped me with a circling arm,
And murmured foolish, tender things to me—
Bringing salvation to a small scared soul
With bread and milk in a blue china bowl!

*One of the best known schools for crippled children is the Spalding School of Chicago.*

# *The* Young Cripple

*By* Frank D. Dickson *and* Henry S. Curtis

THERE are between three and four hundred thousand crippled children in this country below the age of 15. It is confidently asserted by specialists that if the latest information had been available at least 50 per cent of this crippling might have been prevented. In other words, nearly 200,000 of these cripples need never have been cripples, while of the remainder at least one half might have been cured or greatly helped.

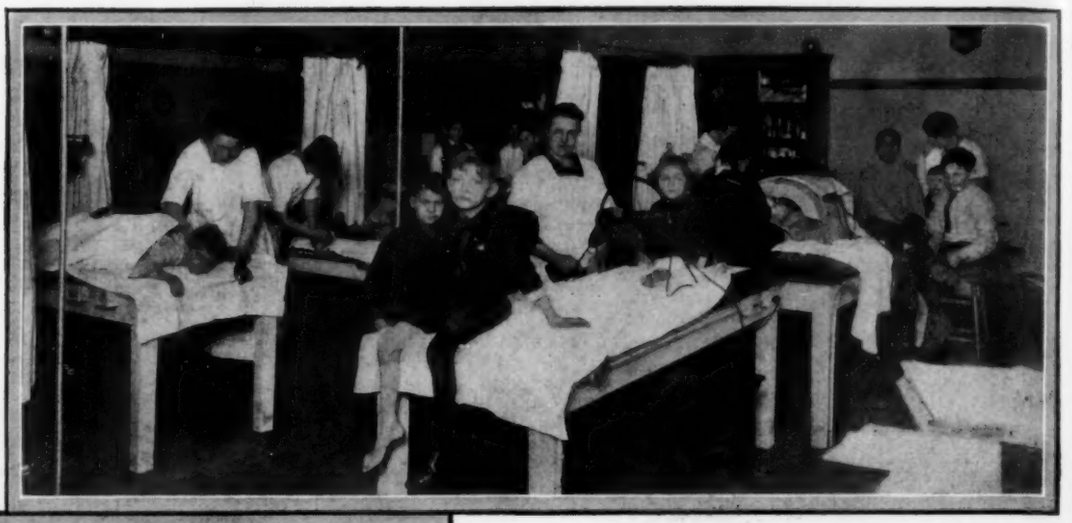
It is the function of the school to pass on to the next generation the information that previous generations have acquired. If our knowledge of the cripple and of the causes of crippling does not constitute an exception, it should be possible to pass on this information also. It is our belief that this is possible and that there is no information that the school and the community is more ready to assimilate and make use of. So far as we are aware this has not as yet been attempted anywhere in detail.

### *Reaching the High School Pupils*

All schools should plan to teach the causes of crippling in the belief that many of the older pupils have younger brothers and sisters, some of whom are crippled; that the high school period is the great period of altruism when the young citizen often longs to do something for the unfortunate ones in the community, and that most of them within a few years will have children of their own, some of whom will be crippled. Some will question whether this information can be taught to high school pupils effectively. We cannot prove it by experience as our syllabus is not yet in use, but in speaking to high school audiences on the subject we have found them to listen breathlessly and have heard of reactions from these talks later in the community.

### *Deformities Fall into Three Classes*

The common deformities from which children suffer may be divided into three classes. The first of these is congenital deformities, which consist of such handicaps as club foot, club hand, harelip, cleft palate and congenital dislocations of bones, usually of the thigh. Most of these defects are easily corrected if taken care of at once. There should be no club footed people in the world, as the matter of correction during infancy is a simple affair involving comparatively little expense or suffering. The same may be said of harelip and of many cases of cleft palate. Every young woman should know that if a child should be born to her with such



*Circulation in crippled limbs is stimulated by electric light radiation, at Spalding School.*

*Lunch room (above) and vocational room (below) at Spalding School. The aim is at self-support.*

a defect, that the defect should be remedied at once. If we succeed in passing on this knowledge to all girls and boys in the upper grades of the elementary school and the high school, it should cure at once about 20 per cent of all deformities among children.

Another large cause of crippling is rickets. Rickets is a food deficiency disease, which we know perfectly well how to prevent. It means that the child is not getting sufficient calcium in his food to supply enough lime for his bones or else that he is not getting enough sunlight to fix this calcium. Rickets is much more common among children who are born in the winter, when the sun is low, than it is among children who are born in the spring or summer, when the sun is higher. A recent study made by the Children's Bureau in Porto Rico, where, of course, the sunlight is intense and where the children wear little clothing during their early years, showed out of 600 cases only one child with rickets, and this child had lived in a cellar.

If mothers would nurse their babies and would give to winter children three teaspoonfuls of cod liver oil a day and get them out in the sunlight as much as possible during the rest of the year, rickets would practically disappear, with all of the deformities of which it is the cause.

Another common cause of crippling is tuberculosis of the bone. Tuberculosis of the bone is largely a disease that comes from unhygienic living and lack of sunlight. Part of it apparently is due to milk from tuberculous cows. If all children used only pasteurized or certified milk and lived in the sunlight as much as they should, the percentage of tuberculosis of the bone would be greatly reduced.

*Rest hour for handicapped pupils at Spalding School, Chicago.*

Infantile paralysis causes about 40 per cent of crippling. There is still a great deal that we do not know about infantile paralysis, but we do know pretty well how to prevent deformity and the more serious crippling if the matter is taken in hand at once. A child requires rest, good food, the best of care, and the injection of the convalescent serum at the earliest possible moment. If this is done before paralysis takes place, in a great majority of cases paralysis will be prevented; and, if it is done immediately afterward, the more serious results will be avoided.

### *Those Handicapped by Accident*

A third class of cripples is those handicapped by accident. Injuries due to automobile casualties are increasing rapidly, and there are now twice as many children of school age killed in accidents as die from any one disease. According to the records of the National Safety Council, there are thirty-four nonfatal accidents for each fatality. St. Louis has introduced a system of safety education into its schools, with the result that 75 per cent of the accidents to children have been prevented.

The first great problem of the cripple is to locate him. In a community in which there has not been a census there is usually no definite idea of the number of its cripples. The invariable answer is, "We have no cripples," or "There are very few in this community." Yet, from surveys that have been made in many cities and states, it appears that there are nearly always three or four crippled children in every thousand of the population.

The usual method of getting a state or local census has been in the beginning to have the teachers report any crippled child that they knew about or any one that their pupils knew about. While such an enumeration is incomplete it usually reveals several times as many cripples as any one thought were in the community.

The state law should require cripples to be listed separately in the school census. This has been done in several states and is well worth while, but it never finds all and seldom even a majority of the children. There is a tendency for parents to conceal them. If bed-ridden, they are not often seen. Even when surveys have been made, ofttimes many children will come to the clinic who were not found in the survey.

### *Organizing District Clinics*

The next step in organization is the holding of a clinic, which should be very thoroughly announced throughout the district. A systematic effort should be made to have all crippled children brought in for examination.

Such clinics require the services of an orthopedic surgeon and a nurse. Ofttimes a hundred or more children will be brought in from a well populated county. Some of these will be hopeless or nearly so, because they have been left too long or because they are mental cases. Some can be easily helped and at little cost, while others will require long and expensive treatment to secure results. Some of the parents will be able to pay for treatment; others will be able to pay in part, while still others will be unable to bear any part of the expense. Some parents will be willing and eager to do anything possible, while others will be indifferent or fearful of the pain and suffering involved, or unwilling for their child to go away to the hospital.

To secure adequate treatment for all is a matter of almost infinite tact and patience. The

state must make provision for those who cannot be cared for at private expense.

The majority of crippled children may be cured or helped by special operations for relieving muscular tension or removing diseased bone or tissue. For such an operation the child should go to a hospital where he may have expert care. There are such hospitals in nearly all large cities.

After the child has recovered sufficiently, it is often best that he go to a convalescent hospital where care need not be so expert or expensive and where there will be an opportunity for schooling while he is getting well. Such hospitals are usually located in the country and are needed especially by country children, who might not otherwise attend school.

When the child returns to his home, he still needs orthopedic supervision. There are braces to be adjusted and there is need of good food, sunlight and special exercises. Many of the counties of England have their own county hospital with orthopedic nurses who visit the children in their homes and see that they come back to the hospital at stated intervals for reexamination and treatment. The state of New York employs thirteen such orthopedic nurses, each of whom has a special district.

### *Social Causes of Deformity*

So far we have dealt with the main causes of crippling, the general considerations of treatment and the possibilities of recovery. Important as the medical profession considers this work of repair, it realizes that there is a higher goal to be striven for—the eradication of the cripple. Eradication is most desirable, both from a humanitarian and economic point of view, but it is impossible so long as the conditions and diseases that cause crippling continue to exist. It can be reached or approached only by removing the conditions and stamping out the diseases that are the causes.

The public schools must impart the information that will help all to understand the importance of the prevention of crippling.

Here are a few of the conditions that cause crippling:

1. Improper and insufficient feeding.
2. Insufficient fresh air, sunlight and exercise.
3. Uncleanliness.
4. Unhygienic surroundings.
5. Insanitary housing.
6. Apathy on the part of the parents.

It needs but little thought and but average intelligence to appreciate the importance of clean, wholesome living and intelligent medical care in the prevention of crippling. Plenty of food, plenty of fresh air, plenty of sunlight and sufficient exercise are the best safeguards against the diseases that cause deformity. When these facts are brought home to the father, mother, teacher, and the children themselves, the problem of caring for our physically handicapped is well on the way to solution. Add to this the proper care for those afflicted at the earliest possible moment, their education and placement after education in positions which will enable them to be self-supporting, and the solution is complete.

In schools for normal children the cripple is usually left out of the activities. He cannot play on the baseball team or take part in the games. It is difficult for him to go on walks or picnics. He is likely to develop from this condition an inferiority complex and a feeling that he cannot succeed. Other children should learn to be considerate, but they often are not, and the unfortunates are sometimes abused and picked on. For many reasons it is desirable for cripples to go, for a time at least, to a special school, where they will be on an equality with the others and where they may be made to realize that success is still possible.

### *Special Schools or Classes*

Studies made by Prof. C. S. Berry of the University of Michigan indicate that there is about one child in every thousand of the population who is in need of a special school or class. These schools are now found in nearly all large cities. The academic curriculum is usually the same or nearly the same as it is in the other schools, but they all have special features. The building is usually a one-story structure. There are special frames in which to learn to walk. There are side rails along the halls and classrooms for the children to hold to. There are special adjustable seats that may be fitted to give support where needed. There is a hearty warm lunch in the middle of the day with a rest period afterward and at any other time it may be needed. But the special features are for physical care.

Under the heading of physiotherapy there comes a series of exercises and practices that are intended to correct, so far as may be, crippling conditions. These include massage, corrective gymnastics, passive manipulation of muscles, hydrotherapy, rest, and the use of ultraviolet lamps.

The children are usually transported to these schools in special busses belonging to the schools, with a driver and an attendant for each bus. The attendant helps the children on and off and carries the ones who cannot get about by themselves. Two of the best known of these schools are the Sunbeam School of Cleveland and the Spalding School of Chicago.

Such schools are expensive. The state of Michigan pays the excess cost up to $200 per child for this teaching, while the local school authorities pay the same as they pay for the normal child. In Ohio, the excess cost may be paid by the state up to $300 per child. In Missouri, the law provides that the state will pay

$750 toward the teacher's salary for the instruction of any ten or more crippled, blind or deaf children. To have ten children needing special instruction usually requires a city of about 10,000 population.

A number of states provide also for the teaching of crippled children in convalescent hospitals and for bedside and home teaching for children who are unable to go to school. New York pays one dollar an hour for such teaching for three hours a week, thus the expense is not greatly in excess of that for normal children in our great cities. The children usually pass their grades. As the crippled child will probably not be able to make a living as an unskilled laborer, it is important that he should have an education. As he has much time to read, if otherwise normal, he usually makes rapid progress in his school work.

After the child has reached the age of 15 or 16, or earlier, if possible, there should be vocational training looking toward some suitable occupation. The one-handed child should be trained for a one-handed job, and the child with one leg should be trained for a position that will not involve much walking.

The cost of the medical care, education and vocational training of certain children may run as high as one thousand dollars, but even at that rate the state is making a tremendous profit, for it may be expected to get back not less than thirty years of service worth at least one thousand dollars a year. The profits on the social side in happiness and contentment and loyalty are not less important. A large number of these children would otherwise have become public charges and sources of general discontent. History has shown us in its Richard III and fiction in its Qulips the sort of social attitude that is likely to develop in the neglected cripple.

### *Rehabilitation*

Since the war, there has been a general movement to extend rehabilitation service to injured civilians also. There are now forty-one states with rehabilitation departments. This work is supported in part by the government at Washington and in part by the states. The federal board requires that the funds furnished nationally shall be at least matched by state appropriations, but in some cases the amounts appropriated by the states are greatly in excess of those furnished by the federal government. These funds are not, however, available for the training of children below the age at which they may legally go to work.

The reports of the rehabilitation department indicate that the average age at which civilians are being rehabilitated is 30; that the average cost is $230, which is about 25 per cent of the earnings of the first year after rehabilitation. It is estimated that these rehabilitated persons have on an average twenty years of employment before them. Consequently it is an enormous saving to the community to give them the training that enables them to be self-supporting. It must be realized, also, that nearly every adult cripple represents a problem of unhappiness, of social unrest, of unemployment, of poverty, and ofttimes of begging.

The rehabilitation departments under the Department of Vocational Education in the different states have lists of many positions that may be taken by crippled people. They are successful in placing a good share of those that they retrain. The Rotarians in some cities are taking a special interest in this work and are accepting many crippled employees in their own organizations or are finding positions for them.

### *What Society Owes the Cripple*

The younger of these workers, especially, need a continuous supervision to see that they are properly adjusted in their jobs and in their home life.

There is an immense field for the employment of those handicapped in municipal, state and federal departments.

In all athletic contests it is customary to have certain handicapped events, giving those who are at an obvious disadvantage a certain lead over the others. The same should be true in the race of life. A handicap should be given to cripples. Perhaps the best handicap is that there should be a special department or commission to look after their education, training and placement in industry. Society owes them at least that much. They are at least semi-wards of the state. Our fundamental tenet of equality of opportunity for all must mean some help for the cripple. We must provide the means to help the cripple to independence.

# Danger Ahead!

## When There Is Blood in the Urine

By
Philip S. Rosenblum

### *Suggestions You Should Follow*

*1. Have routine urine examinations made preferably at the time of your periodic health examination. Frequently abnormal elements such as pus or blood may be discovered in the urine early enough to prevent serious trouble.*

*2. Report to your doctor any unnatural disturbance of the urinary act.*

*3. Blood has no place in normal urine; therefore, report promptly to your doctor during your first attack of bleeding.*

*4. Do not be satisfied until you have learned the source and cause of the bleeding.*

*5. Blood in the urine may be the first sign of a new growth in the bladder or kidney.*

*6. Every tumor of the bladder or kidney is potentially cancerous.*

*7. Delay for months or years after seeing blood in the urine may mean the difference between a tumor that can readily be destroyed or removed and a cancer.*

BLOOD in the urine is never a normal condition. If you see it or if it happens to be discovered for you in a routine urine examination it always means some constitutional disease or more likely some disease of the urologic tract. It is nature's danger signal to stop and look for its source and cause without delay.

Urology is that subdivision of medicine that deals with the diseases of the genito-urinary tract. It is by no means a recent specialty but dates back as far as 2200 B. C. There are many records and references to genito-urinary surgery and the operations for urinary stones at this period. However, it was not until 1876 when Max Nitze invented an instrument which was perfected in 1879, the same year that Edison gave the world the incandescent electric bulb, that real progress was made. The combination of the two immediately began to revolutionize the study and treatment of diseases of the genito-urinary system. This instrument is known as the cystoscope and with it the urologist is able to look directly into the urinary bladder.

### *Cystoscope Opened Way to Progress*

With this instrument the physician can readily see stones, tumors, inflammations, tuberculosis, enlargement of the prostate gland and many other abnormal conditions. Since then urology has made progress by leaps and bounds. It has contributed largely to the low mortality in some major surgical operations such as the removal of the prostate gland. The invention of new instruments, the improvement on old ones, x-ray examination and the general advancement in all branches of medicine make urology today a most accurate and scientific specialty. Treatment of venereal disease is a minor subdivision of this specialty.

### *The Urologist's Work*

Every general hospital has today either a cystoscopist or a distinct department of urology, and hardly a day passes that the technical skill and knowledge of the urologist are not sought in the cooperative plan of all up-to-date hospitals. His work is particularly valuable to the medical and general surgical department in differentiating gallbladder disease from kidney disease or appendicitis from stone in the right ureter, and in kidney infections.

The urinary organs comprise the kidneys, which secrete the urine; the ureters or ducts, which convey the urine to the bladder; the bladder, where the urine is for a time retained, and the urethra, the duct through which the urine is discharged from the body. In the male the urethra contains also the openings of some of the reproductive organs such as the prostate gland and seminal vesicles. Blood in the urine may come from any one of the organs just mentioned and you can readily see what a painstaking search your doctor must make to discover the source of the blood. Is that sufficient? No, indeed.

The blood is only a symptom of a disease and the day for the treatment of symptoms is past. What is more important is to ascertain the disease causing the bleeding. There is a multiplicity of causes such as certain blood diseases, drugs, acute inflammations, injuries, mechanical obstructions and anomalies.

### *Frequent Causes of Blood in Urine*

Suffice to say that the most frequent causes of blood in the urine are stones, tumors and tuberculosis anywhere along the urinary tract. The question arises—does the bleeding come from the bladder, prostate or kidney? If it is from the kidney, which one? Or does it come from the urethra? Your doctor will, by careful history, physical examination and a complete urologic examination including cystoscopy, placing of catheters up the ureters and testing the kidney function, plus the aid of the x-ray if necessary, discover the source and cause of the bleeding in the majority of instances. However, in certain few cases he will fail and repeated examinations should be made from time to time.

What part can you play in the prevention or treatment of some of these diseases? Frequently the first evidence of a new growth or tumor in the bladder or kidney is blood in the urine. Every tumor of the urinary tract has the power of changing from an innocent growth or one that is readily removed to a fatal tumor commonly known as a cancer. Therefore, report to your doctor promptly during your first attack and do not wait until the second or third attack of bleeding because the tumor by then may have become cancerous or a cancer may have spread so as to become inoperable. Every urologist has had the sad experience of looking into a bladder and finding an inoperable growth or the cancer already spread to other organs of the body. In the majority of these patients the initial attack of blood in the urine dates back anywhere from six months to three years. Why the delay? One of the reasons is the fact that in the majority of patients the bleeding is periodic, is painless and stops of its own accord; thus the patient is lulled into a false sense of security that the bleeding was of no consequence or the result of some minor disorder when as a matter of fact this was nature's warning signal and should have been heeded.

### *Kidney Stones*

Stone in the kidney or in the ureter is a common occurrence. Most of these stones will pass through the body without any interference; however, a small percentage of them will become lodged somewhere along the urinary tract. Here the urologist with cystoscopic manipulation may aid and encourage these stones to pass if the patient reports to him early. If he waits too long infection sets in and the kidney may be completely destroyed.

Tuberculosis of the urologic tract starts as a rule in one kidney. The most common symptoms are disturbances of the urinary act such as frequent urination both day and night, pus and blood in the urine. The most successful treatment in the light of our present knowledge is nephrectomy, or removal of the diseased kidney, provided the other kidney is healthy. Frequently the other kidney will become affected and by failure to report to a doctor early the golden opportunity for cure is lost. Early recovery depends on early discovery.

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*Howdy there, Spring!*
*Been a-hankerin' for you*
*Many months, Old Thing.*
*Plumb wore out with Winter*
*Wantin' creeks to sing*
*And hick'ry buds to swell agin.*
*Howdy there, Spring!*

# SIMPLE LESSONS *in* *Human Anatomy*

*By B. C. H. Harvey*

LESSON XIII

THE ORGANS OF EXCRETION

THE need of efficient means of getting rid of waste products is apparent when we think of the living human body as an organization of 27 million million cells which live and work, die and disappear individually. Each gets its energy from the oxidation (burning) of food substances, which as we have seen are burned, thanks to the enzymes, even in the wet dark interior of cells. This oxidation produces energy, but it produces also waste and ash—carbon dioxide, water and various mineral salts. The great transportation system, the circulating blood, carries oxygen and food to the cells; it carries away also their waste and ash in solution. Evidently the blood needs some means of getting rid of this waste.

Further, when cells die or are killed, as in bruises, the remains are eaten up by scavenger cells, phagocytes. We have seen that many of these phagocytes crawl into the accessory transportation system—the low pressure tubes of the lymph vessels. These tubes carry the cells through lymph glands and empty them eventually into the veins at the root of the neck. The same fate awaits foreign matter that gets into the body through wounds. The phagocytes eat it up also and carry it away, unless, like the pigments used in tatooing, it is inedible for phagocytes, and is left where it gets in; the blood gets from this source also some waste material, to dispose of which it needs excretory organs.

Again, we eat all sorts of things and frequently too much, and some people have a weakness for swallowing drugs about the nature of which they know little or nothing. Most of what is swallowed is digested and absorbed from the intestines, and so it gets into the circualting blood. Some absorbed substances are harmful, and fortunately the body cells often refuse to take them up from the blood. In that case the natural physical reactions of the cells protect them better than did the idle brains of the human being who swallowed the stuff. Some good foods are swallowed and absorbed in excess, and though fats and carbohydrate foods may be stored if in excess, protein foods are not; when the blood has taken up an excess of protein (meat) from the intestine it needs a way to get rid of it. Also the poisons produced by bacteria in infectious diseases circulate in the blood stream.

Now the circulating blood is marvellously constant in composition. Even though it is constantly receiving waste and excess and foreign materials from all these sources, they do not accumulate in it; they are promptly excreted. This is done in the excretory organs. By their ready and constant action harmful and excess substances are promptly taken out of the blood. These organs have much to do with keeping us in health and they frequently save our lives. They consist of lungs, skin, alimentary canal and kidneys.

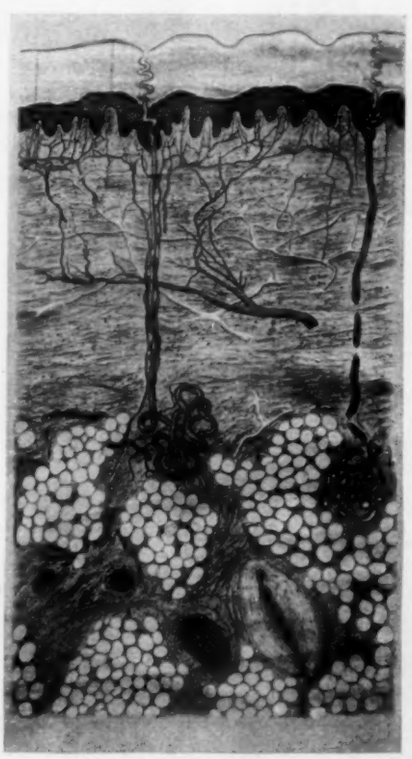

*Fig. 137.—Section of the skin of the human finger showing two sweat glands.*

From the account given of the structure of the lungs and the 300 million tiny air sacs contained in them with their intimate relation to blood capillaries it is apparent that they offer the blood an ideal means of getting rid of such undesirable substances as can be vaporized. Most of the waste carbon dioxide and one ninth of the total water excreted goes off as vapor in the breath. Alcohol is a readily vaporized substance; we can tell if a man has swallowed it if we can just smell his breath. Camphor, creosote, balsams, chloroform and other substances are excreted by this route, and we know that some

products of indigestion are so excreted because they give a bad smell to the breath, popularly known as halitosis.

### *The Skin as an Organ of Excretion*

In the account of the skin (January, 1929) the sweat glands (fig. 137) were described. Each gland is a coiled tube surrounded by blood capillaries. The cells of the coiled part of the tube take water (sweat) from the capillaries and transfer it to the hollow center or bore of the tube, whence it is poured out on the surface. Along with the water these cells also transfer various substances in solution. Bromine and iodine are excreted in this way and may be detected in the sweat. When doctors give patients sulphur in any considerable quantity they are likely to caution the patient against wearing silver jewelry because the sulphur

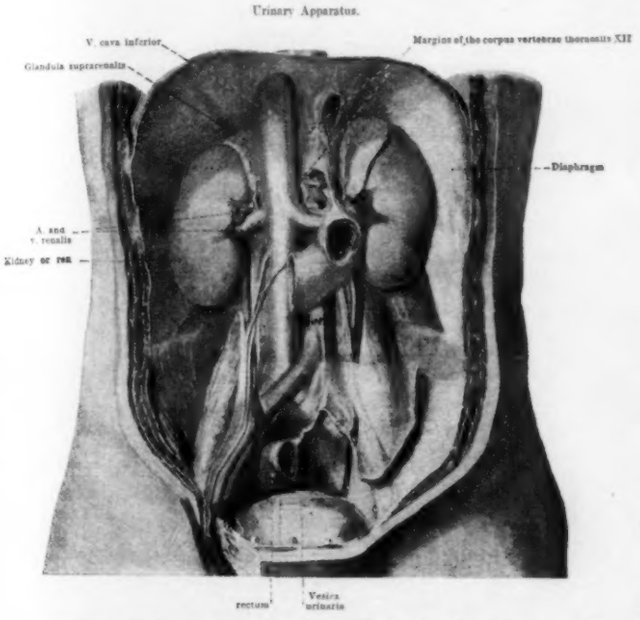


*Fig. 138.—Kidneys, ureters and bladder viewed from in front. The intestines have been removed except a short piece of the small intestine. (From Spalteholz, Herzil.)*

excreted in the sweat may blacken it. Lead, mercury and arsenic are also so excreted. Arsenic is peculiar because it is excreted partly into the hair and is thus lost when the hair is cut or falls out. About one quarter of the water excreted is thrown off through the sweat glands —more on hot days, less on cold days.

### *The Alimentary Canal*

In the alimentary canal we have seen (December, 1929) that both blood and lymph capillaries are so close to the single layer of cells making the inner layer of the wall of this tube that the cells can easily take up food in solution from the inside of the tube and transfer it to the capillaries. The reverse process is also possible; these cells may transfer substances in solution from the capillaries to the inside of the tube to be later thrown out with the feces. This channel of excretion is followed by lime and some phosphates and compounds of the metals like iron salts, bismuth, copper and aluminum. Further, solid substances that do not go into solution in the body fluids may be carried from the capillaries to the intestinal cavity by phagocyte cells, which as we have noted can crawl through the capillary wall. They can also crawl through the intestinal wall, going between the cells. Thus the scavenger cell together with any solid matter which it has ingested may be excreted and thrown out of the body. Perhaps this function explains the close association of masses of these wandering cells with the alimentary epithelium as in the tonsils, Peyer's patches and vermiform appendix. No other function has been found for them, and this one is not definitely proved. The intestine is an important excretory organ and the large intestine plays an especially important rôle in this work.

### *The Main Excretory Organ—The Kidney*

By far the greater part of the elimination of substances from the blood is accomplished by the two kidneys (fig. 138). The kidneys take substances in solution from the blood and throw them out as the urine. The units of structure and of function in the kidney are the kidney tubules or nephrons (figs. 139 and 140). They resemble somewhat the sweat glands, which can perform a similar function. They are lined throughout with a single layer of cells enclosing a very fine central canal. Each kidney contains about 1,200,000 nephrons, and as each is about 2 inches long the total length of them in an adult man is 4,800,000 inches or about 75 miles. Though long, they are exceedingly fine, and so do not take up much space. Each is entirely and intimately surrounded by blood capillaries. A constant interchange of fluid goes on between nephrons and blood capillaries (fig. 143, right).

The nephrons are ready to do their work at any and all moments of the day or night throughout all this great length, and so one can see how it is that the blood is purified promptly. The nephrons deliver their product to the collecting tubules. The smaller end of each nephron is attached to a terminal twig of the system of collecting tubules like a leaf to its stem. Each lobe of the kidney is like a shrub of which the numerous stalks and twigs are the collecting tubules and the long leaves attached to the ends of the twigs are the nephrons (figs. 141 and 143 left). The nephrons are all essentially alike, and they are wonderfully specialized for their work. Each is made up of four parts (fig. 140). At the end of each is a ball about $\frac{1}{200}$ inch in diameter. This ball has its unattached side depressed, as can sometimes be done with old tennis balls (fig. 139 [1] and fig. 142). This makes a cup with double walls

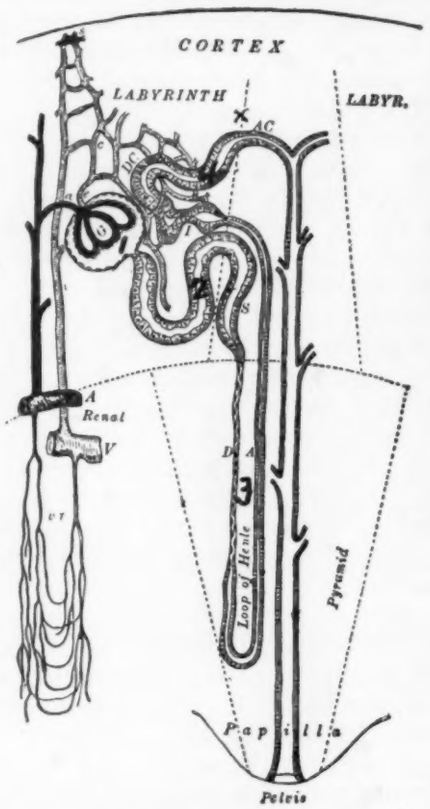


*Fig. 139.—Diagram of one nephron, its artery, some of its veins, and the collecting tubule to which it is attached at "x." The nephron has four parts. The artery is black and the veins and capillaries are cross-lined. Few capillaries are shown; actually they cover the nephron completely. (From Bailey's Histology, William Wood & Company, from Pearsol.)*

*Fig. 140.—Model of a part of one human nephron, magnified 50 diameters. The long loop is only partly shown. Part 4 is dense black, and the collecting tubule (5) to which it is attached is shown only in outline. (Modified from Braus, Springer.)*

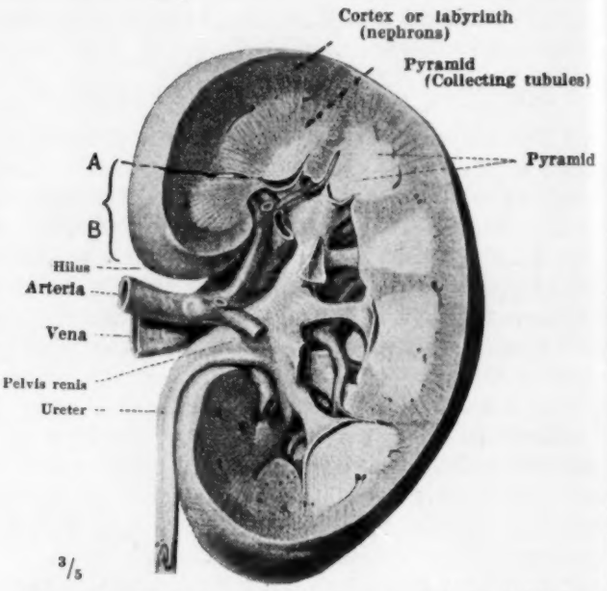


*Fig. 141.—Right human kidney opened from behind, showing six complete lobes, with their pyramids filled with collecting tubules, and parts of other lobes. (Modified from Braus, Anatomie des Menschen, Springer.)*

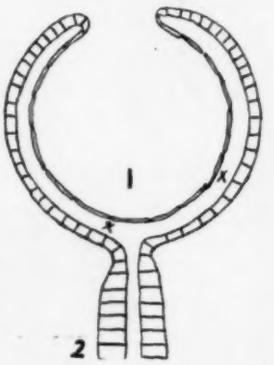


*Fig. 142.—Diagram to show the structure of the ball (capsule of Bowman) at the end of each nephron.*

*Fig. 143.—Reconstruction of a minute wedge of kidney, including both pyramid (collecting tubules) below and cortex (nephrons with their corpuscles) above. On the left side only collecting tubules and nephrons are shown. On the right the blood capillaries are represented. Half diagrammatic. (From Braus.)*

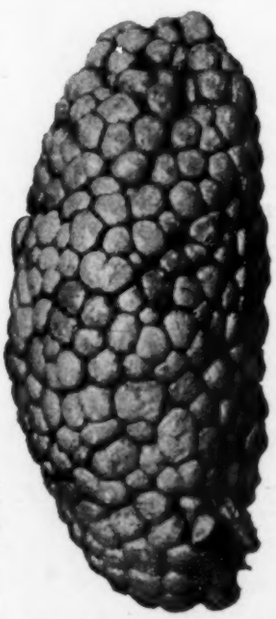

*Fig. 144.—Kidney of an aquatic animal. The lobes are encased separately each in its own fibrous capsule. (From Braus, Springer.)*

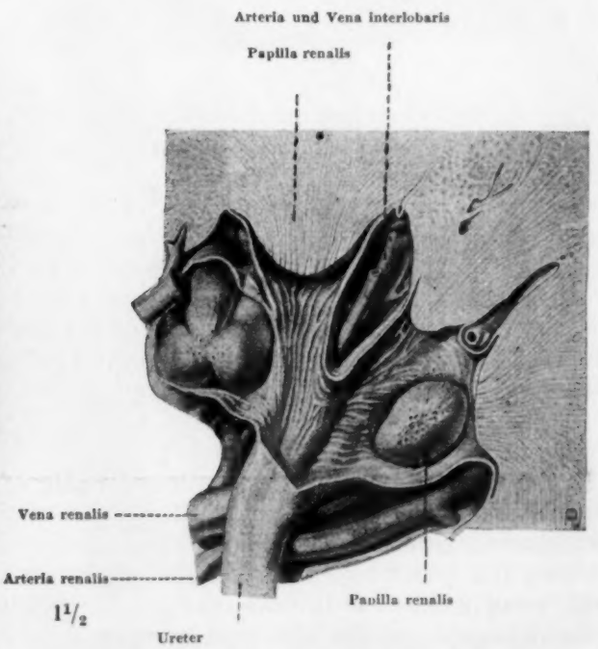


*Fig. 145.—Pelvis of human kidney opened to show how the apex of each pyramid (papilla) opens by from ten to twenty-five foramina into a funnel-shaped process of the pelvis. (From Braus, Springer.)*

like a thermos bottle. The inside of the cup is filled with a mass of fine blood capillaries.

This terminal cup is called a capsule of Bowman. The capsule and its contents together constitute a kidney corpuscle. There are 1,200,000 in each kidney. Part 2, stippled in figure 140, is a much convoluted part of the nephron. It is less than half the diameter of the terminal cup and has thick walls. It passes over into a third part, which is curious and characteristic of the nephron, or kidney, tubule; it is a long loop, like the U-shaped slide of a trombone. It is too long to be drawn in full in figure 140 and so is merely indicated (see also fig. 143). The descending limb of the loop is very thin, $\frac{1}{1200}$ inch, being only one third the diameter of the convoluted tube 2. The ascending limb is thicker and passes over into the fourth part (very black in figure 140), which is still thicker, $\frac{1}{600}$ inch in diameter. This fourth part passes over its own corpuscle, being cemented to it, and then forms a second convoluted tubule. This finally joins part 5, which is not a part of the nephron but a collecting tubule; it is the terminal twig of the system of collecting tubules.

*Sir William Bowman (1816-1892), English anatomist and physician, made many important contributions to our knowledge of the structure and working of the kidneys.*

The manner of working of these four parts of each of the millions of nephrons is admirable. Foreign or waste substances can be excreted in very dilute solution much more readily than would be possible if the solutions were concentrated. The nephron excretes them in dilute solution without losing much water from the body and without losing any of the useful soluble constituents of the blood which pass out along with the harmful ones.

The corpuscle begins the process. Into each cup goes one artery which divides into tufts (two to five) of very fine capillaries which fill the cup and come into the closest relationship with the thin inner membrane. Fluids pass from the capillaries into the cavity (x in figure 142), and they carry with them in dilute solution the harmful substances like urea and also many useful substances like sugar and sodium chloride. About one tenth of the total fluid of the blood passing through the capillaries of the corpuscle is so excreted, making about 60 quarts of excretion per day. That amounts to no more than $\frac{1}{27}$ of one drop per hour for each corpuscle.

The fluid passes along the tubule to the first convoluted part (fig. 140). So do all the blood vessels. The capillaries of each corpuscle join together again and form one artery which leaves the corpuscle and goes to the successive parts of the same nephron, breaking up a second time into capillaries which form a network closely surrounding parts 2, 3 and 4. In these parts the useful substances passed out in the corpuscle are reabsorbed by the capillaries, as is also most of the water. Fifty-eight and a half of the 60 quarts thrown out daily by the corpuscles is so reabsorbed. Thus the urine is concentrated in parts 2, 3 and 4. Of the 60 quarts excreted by corpuscles only 3 pints reach the bladder. That is the normal output of urine per day for an adult man. The amount varies with the intake of water and the amount of the sweat (maximum 3 quarts, minimum 1 pint).

The first convoluted part of the nephron excretes urea and other substances on its own account, just as the sweat glands do on occasion. Urea is an end product of the breaking down of protein foods or body tissues. It is quite poisonous and if any considerable amount of it remains in the blood it produces coma and death (uremic poisoning). Each day about one ounce is excreted, ten times the poisonous dose. In disease of the kidneys the sweat glands excrete a considerable amount of urea. Thus all the blood which reaches the capillaries of parts 2, 3 and 4 of the nephron has previously gone through the capillaries of the corpuscle, part 1. In the corpuscle it loses water, urea, sugar and salt. In parts 2, 3 and 4 the capillaries get back all the lost substances except the harmful ones, and they get back also 97 per cent of the lost water. The function of the long loop interposed between the two convoluted parts of the nephron is believed to be to allow free reabsorption of water through its very thin walls.

The 1,200,000 nephrons in each kidney are arranged in from twelve to eighteen groups, each containing about 80,000. The end of each nephron joins the end of a twig of the system of collecting tubules (fig. 139 x and fig. 143 left). The collecting tubules and nephrons are totally different in their embryonic history. At first they are quite separate from each other. They become connected only late in fetal life, as though the leaves did not grow on the bush, but were attached after the stalks were full grown without any leaves. The collecting tubules are arranged like shrubs with from ten to twenty-five stalks each, extending up, spreading somewhat, and branching till there are 80,000 terminal twigs (fig. 143 left). To each is attached the end of a nephron. Their convoluted tubules and

corpuscles (the foliage) thus are around the periphery of the bush of collecting tubules (fig. 141). The long loops of the nephrons extend down between the collecting tubules (fig. 141 left). Such a group of collecting tubules is pyramidal in shape, and is called a renal pyramid (fig. 141).

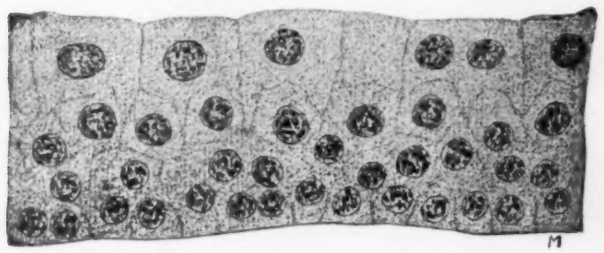

*Fig. 146.—Epithelium lining the human bladder. (From Bailey's Histology, William Wood & Company.)*

A pyramid with its group of attached nephrons is a lobe of the kidney and there are from twelve to eighteen of them. Between the lobes the arteries and veins run from the hilus of the kidney out toward the surface, and each artery gives off one branch to each corpuscle (figs. 141 and 143). Each lobe is shaped like one bush in a clump of bushes. The small end is composed of from ten to twenty-five hollow stalks; it constitutes the pyramid and is composed of collecting tubules. The outer, bigger part is composed of nephrons (convoluted tubules and corpuscles). This outer part is often called the labyrinth, or cortex, to distinguish it from the pyramid (fig. 141).

The lobes of the human kidney are not separated from one another. Each is really distinct like one bush in a clump, but the blood vessels make only imperfect fences between them, and they seem to run together. The lobes are not done up in separate packages which can move on one another. In larger animals, like whales, that bend their bodies freely and so bend their large kidneys, the lobes have separate fibrous wrappings (fig. 144). This permits more freedom in bending the kidney. The human kidney is enclosed in a single fibrous capsule (fig. 141), and the all-pervading connective tissue fibers tie all its parts together. It has, however, reached the limit of size in which this arrangement is practicable, and large human kidneys are sometimes torn internally by extreme movements of the body which involve bending the kidneys.

At the apex of each pyramid (papilla), from ten to twenty-five collecting ducts open through as many small foramina (fig. 145). The urine discharged from them is received in one of the eighteen or twenty funnel shaped ends of the ureter. The ureters are the two large ducts, one from each kidney, which carry the urine down to the urinary bladder. At its upper end each enters the kidney, becomes enlarged to form the pelvis of the kidney, and from this extend the terminal funnels, one to each pyramid. Each funnel is attached to the surface of the pyramid so that there can be no leakage. In front and behind the pelvis the arteries and veins enter the kidney to divide into branches which extend between the lobes, supplying the lobes on both sides of them with blood.

In the embryo the kidneys lie in the pelvis of the body. During fetal life they ascend to the position shown in figure 138. In the adult they lie on each side of the vertebral column in front of the eleventh and twelfth ribs extending downward to the third lumbar vertebra. This is apparently the only position they could safely occupy in the abdomen. Were they to remain in the pelvis they would be greatly injured in the female by great compression during childbirth. In any lower position in the abdomen they would be subject to flexion in extreme bending movements of the body, movements which are most acute and extensive in the lower lumbar region.

### *The Discharge Pipes*

In the hilus of each kidney is the kidney pelvis (fig. 138). This receives all the urine, about fifteen drops per minute. From its medial side a large duct extends toward the surface of the body and carries away the urine to be discharged. This is the ureter. Each ureter leads from the pelvis of the kidney to the urinary bladder, which lies at the bottom of the pelvis of the body (fig. 138). Each ureter is 1 foot long and ⅕ inch wide. The urinary bladder acts as a storage receptacle which can be emptied from time to time, and thus is avoided the constant dripping of thirty drops a minute that would be necessary without such a receptacle. All mammals have urinary bladders. The capacity of the human bladder is a little less than 1 pint, but when distended it may contain 1½ pints.

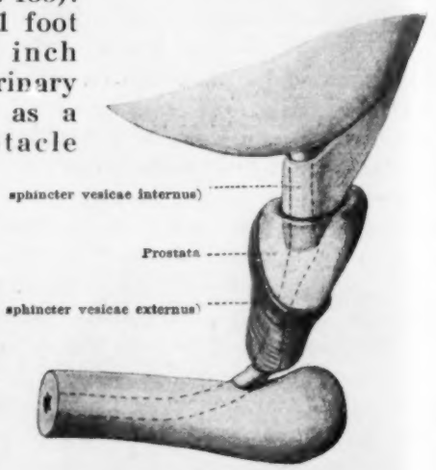


*Fig. 147.—The sphincter muscles that control the emptying of the bladder. The upper one is automatic; the lower one is under the control of the will. They surround the male urethra, one just above and the other just below the prostate gland. (From Braus, published by Springer.)*

The walls of the ureters are composed of an inner mucous membrane and an outer muscular coat of plain muscle fibers. The mucous membrane is mesodermal in origin (see September number, 1929); nevertheless it is much like that of the bladder though the latter is split off

from the alimentary canal and therefore entodermal. In both ureter and bladder this membrane is composed of several layers of cells (fig. 146) which have the property of slipping sideways on one another and becoming flattened when the cavity is distended. Epithelium of this type is especially serviceable in cystlike organs which undergo frequent and extensive changes in size.

The muscular coats of the ureter are in two layers, an inner longitudinal and an outer circular layer—just the reverse of the arrangement in the intestine. The long fibers widen the central canal, the circularly disposed ones force the urine along it by waves of contraction progressing toward the bladder. Sometimes little stones form in the kidney pelvis, become engaged in the ureter and the irritation provokes intense contraction waves forcing the stone onward. This is one of the most painful conditions to which the body is subject.

The muscular coat of the bladder is stronger at the base and weaker and netlike above, where the distention of the bladder occurs. In the upper part of the bladder the connective tissue between the muscle fibers is largely elastic and helps the muscle in forcing out the contents of the distended bladder. Under the base is a considerable group of fibers which make a loop (fig. 147) around the urethra, the tube that runs from the bladder to the surface.

These fibers are separate from the other plain muscles of the bladder. They are called the internal sphincter muscle and they act as an automatic tap. Usually the fibers are contracted and so the tap is shut off, but they relax when tension in the bladder gets up to a certain height (¼ pound per square inch). Then the tap automatically opens and the bladder empties itself because of the pressure produced by the elastic fibers in the wall and by the other bladder muscles. The latter, unlike the sphincter muscle, always contract when under tension in any degree. This is an example of the automatic mechanisms of the body that work through the cooperation of the vegetative nervous system, which will be described in a later number.

We know, however, that emptying the bladder is not purely automatic, for we can control it by the will. This is done through a second tap, which is placed lower down on the discharge tube leading from the bladder to the surface. This tube is called the urethra. It is about 8 inches long in the male, but only 1¼ inches long in the female. The second tap (fig. 147) is composed of cross striped muscle fibers, which as we have seen in the lesson on muscle (March, 1929) are usually subject to voluntary control, as in the movements of the hand or foot which they produce.

The second tap closes the urethra by compression or leaves it open, as we will. It is placed about an inch beyond the first, or involuntary, tap and lies in the male just beyond the prostate gland and in the female near the outer opening of the urethra.

The urine is a fairly concentrated solution. From such solutions the substances in solution tend to crystallize out, especially if a nucleus is furnished by a minute particle of solid substance. Such nuclei are occasionally furnished in the kidney pelvis by fragments of cells of the nephrons which have been killed by poisons, and so small stones are formed in this place. They are more common and much larger in the bladder, where the nuclei are formed of dead epithelial cells or bacteria.

*Ewing Galloway*

# CANCER IN WOMEN

*By P. Brooke Bland*

THE primary cause of cancer is still obscure, but the secondary, or exciting, cause for the most part is known. This is especially true of cancer in women and it is this secondary phase of the trouble that the doctor can conquer. It is comparable to smoke that precedes a flame and hence can be subdued.

Cancer rarely, if ever, begins as cancer, whether on the surface of the body or in some organ in the interior of the body. It almost invariably has its starting point in some simple, feelable and often visible thing, as a lump, an abrasion, an ulcer or a common sore which persists and refuses to heal. This early stage is not cancer but an ordinary condition responsive to treatment.

If these simple, painless, apparently harmless conditions were more seriously considered by all the people everywhere and given proper attention, say for a period of ten years, the prevalence of cancer would diminish almost to nothingness.

The observance alone of the rules herein laid down for the short span of a single decade would largely result in the conquest of the disease, would almost wipe it from the map.

The disorder may arise in womanhood at any age. It may be found in young girls and in those who have reached or passed the equator of life's span. For the most part it is found in those who have reached the meridian of life; namely, from the fortieth to the fiftieth year, and at this time it is responsible for more casualties than all the infectious diseases combined.

Speaking now more intimately of the disease as it occurs in women, I may say that no organ in the body is free from attack. Cancer may occur anywhere, though the organs most commonly affected are the breasts in women who have not borne children and the organs of reproduction in those who have borne children.

In women, more than one third of all cases of the disease develop in the uterus, the organ chiefly concerned in childbearing. More than 95 per cent of the cases of cancer developing in this organ are found in women who have had children and especially in those who have had more than one child.

It is almost physically impossible for a woman to give birth to a baby without sustaining some injury, however slight, to some part of the birth canal. The most frequent site is the neck of the womb, and it is here that more than 75 per cent of the cases have their origin.

Let me here make a beseeching appeal to all mothers to observe the rules outlined by the family physician during pregnancy and to be absolutely certain that they receive the highest type of service during and after the birth of their children. If injuries of the uterus could be prevented or if they were corrected immediately after confinement, the menace of cancer, so far as it affects that organ, would be almost completely overcome.

It has been conclusively demonstrated from a study of many thousand cases that cancer seldom if ever develops in the uterus after lacerations have been repaired. On the other hand, a woman with an unrepaired laceration in the neck of the uterus cannot be looked upon as safe from future trouble.

The best safeguard against cancer is for a woman to have all lacerations or injuries properly cared for. It is the best possible form of life insurance.

There is nothing one can point to that definitely predisposes to or favors the development of cancer of the breast. A small, painless, hard lump in the breast substance appears. In the majority of instances the lump is not cancer but a forerunner of the disease. Rarely is cancer associated with pain in the breast or anywhere else, and it is a safe working rule to follow that a patient who complains of pain in the breast does not have cancer.

Cancer never gives rise to discomfort or pain until it reaches extensive proportions. As long as a lump in the breast is allowed to remain, it is a menace, and by having any abnormality of this sort promptly removed you can materially aid in overcoming cancer. To ignore it is to court trouble. Cancer usually announces itself in a characteristic fashion and hence it provides all of us an opportunity to help blot it out.

The educational campaign against cancer is not conducted to create worry or to startle the public. It is not done to scare you to death, but it is done to frighten you into life.

# Safe Milk

By

Mildred Ida Dillistin

*Unlike oranges and many good foods, milk cannot be bought in its original container; nor can it be washed before it is consumed. Keeping it clean is difficult.*

THE doctors, from both scientific knowledge and everyday experience, proclaim milk the best food in the world. Our bookkeepers of humanity, the statisticians, reveal it to be the cause of more sickness than all other foods combined. It almost seems a trick of fate that our most nearly perfect food is the one that is of the greatest potential danger.

There certainly can be no more complete article of diet than this, which contains fats, sugars, proteins, vitamins, mineral matter—all the essential elements of food (except iron) that man requires to furnish him with heat and energy. The deficit of iron is ordinarily made up by our drinking water. A man, woman or child could undoubtedly live a longer time with the maximum degree of strength and resistance to disease on milk than on any single food.

Historians, viewing the ways of mankind from a less human but more panoramic point of view, record that the milk-consuming peoples have made greater advancements than the non-milk-consuming peoples of the world. They are characterized by larger size, greater longevity and outstanding achievements in science, literature and art. Proper diet develops the human being as surely as good soil grows fine fruit.

### *Bacteria Thrive Best on Milk*

Whether man's wisdom selected for him this best of foods or whether it was chance, it is not possible to determine. But there is logic in assuming that it is its nutritive requirements that make milk the choice of the realm of bacteria. Many of these microscopically tiny but powerful beings require the same elements of food that human beings do. They therefore grow better and multiply faster in milk than in any other of our standard market foods.

You read in today's paper, possibly, of a septic sore throat epidemic involving several hundreds of cases caused by an infected milk supply. The item may have stated, "The outbreak has been traced to a milker on a small dairy farm." You wonder how one man contaminated a small supply with sufficient infective material to cause so many cases of illness. He very probably did not. The bacteria, streptococci in this instance, bred so many families while the milk was in transit that the last ones wouldn't be even woodpile relation to the first ones. The facility with which many kinds of bacteria multiply in milk constitutes the first and possibly most important reason why it so often conveys infection.

### *The Bad Bacteria*

All bacteria, of course, are not pathogenic or disease-producing. Indeed, if it were not for the bacterial processes that are constantly active in the interchange of matter between the animal and vegetable kingdoms, all life on earth would cease. Bacteria are not to be condemned merely because they are bacteria, but when the scientists have labeled a species of them "pathogenic," beware!

By far the largest number of pathogenic bacteria gain entrance into our bodies by way of the mouth and the vehicle is often food. As far as milk is concerned in the spread of communicable diseases, it is only in cases in which it is contaminated by bovine or human sources that illness results.

Comes to a city's health department a report of ten cases of typhoid fever. Investigation discloses, we shall say, that all the families affected used the same milk supply. Does the epidemiologist waste time debating the possibility of "bad air having contaminated the milk" or "warm weather having generated spontaneously the germs of the disease?" He does not. He knows the milk was contaminated by a person —either a patient, a convalescent or a carrier

(one who harbors and excretes the germs of a disease without showing the symptoms). And he sets about the task of finding that person! It may prove to be a milker on the farm, a bottler in the plant, or, less likely, a driver on the route. Or, perhaps the patient, convalescent or carrier responsible contaminated the water in which the milk pails, the cans, the bottling machine or the bottles themselves were washed. There are so many possibilities!

This sort of investigation ensues in milk-borne epidemics of typhoid fever, paratyphoid fever, diphtheria, scarlet fever and septic sore throat. During the ten year period from 1917 to 1926 inclusive there were seventy-eight milk-borne outbreaks of communicable disease in New York State exclusive of New York City; sixty-one of these were of typhoid fever and thirty were definitely traced to carriers on dairy farms. Not long ago an epidemic of 5,000 cases was attributed to contaminated milk from one plant. Up-to-date health departments now carry out systematic examination of milk-handlers to discover and exclude carriers before the epidemic blazes forth. That is to say, the departments with adequate funds and sufficient assistants do!

*The anatomical position of the udder of cow or goat is unfortunate from a sanitary standpoint.*

Why, you may be wondering, do not carriers on dairy farms and in plants cause more outbreaks if they have these bacilli in their systems? Many of them are "intermittent carriers." They do not discharge infective material all the time. And, if these persons are by nature cleanly in their habits, even if they do not realize they are carriers, the risk of contaminating the milk is lessened considerably. Furthermore, many supplies are now being pasteurized; and if the milk goes through this process after handling by a carrier, provided the pasteurization is properly done, the typhoid bacilli will be destroyed.

### *Keeping Track of Carriers*

As to the number of carriers among us, statistics are likely to be misleading, as there are without doubt many more of them than are definitely known. The New York state department of health has record of, and exercises supervision over, approximately 195 typhoid carriers in that state. This is exclusive of other kinds of disease germ carriers who are found from time to time handling milk and various foods for public consumption.

Bovine infected milk conveys and spreads undulant fever, foot and mouth disease, milk sickness, various forms of diarrheas, particularly cholera infantum, and—tuberculosis.

Have you heard some one say, "All this talk about tuberculous cattle causing t. b. in people is bunk and I feel sorry for the poor farmers losing so many perfectly healthy cows through the tuberculin test?" The next time you hear a man make this or a similar statement, tell him he is serenading the wrong balcony, for he doesn't know what he is talking about.

Tuberculosis takes a ghastly toll of human life and at least 25 per cent, very probably more, of the disease in children results from tuberculosis in the dairy cow. And—ponder this—it is becoming more and more firmly established that the disease in adults is often a late manifestation of infection incurred during childhood. In other words, infection is received during early years, perhaps through milk, but remains latent until in adult life lowered resistance causes the disease to gain headway and make itself clinically apparent.

Not long ago, a milk producer and his little daughter called at the office of the village health officer. "The new milk code," he said, "is too strict and a hardship to farmers." Having no way to pasteurize his product he would, according to the new law, have to sell milk from tuberculin-tested cows. He would lose some of them by the test and how could he afford to purchase new ones—at the present price of tuberculin-tested animals?

During the discussion that followed the man, remembering the real object of his visit, asked the doctor about his little girl's enlarged glands. On the right side of the child's neck was a cervical gland which, on incision, yielded about an ounce of pus. The father asked the physician as to the probable cause and was told it was undoubtedly due to bovine tuberculosis germs from infected cows in his herd. Ah! *that* was a different story, a story whose theme touched the heart and all things dear to the family-loving farmer. He was an easy convert to the cause of safe milk for America's children!

I hope the health officer also explained to the farmer that the tuberculin test is a tremendously big help to producers financially—in the long run. If tuberculosis caused spectacular symptoms in cattle as does foot and mouth disease, for instance, livestock owners would loudly

demand its immediate eradication. Because it is generally slow in developing, many owners do not realize the sinister aspect of the disease. They do not know bovine tuberculosis is one of the heaviest burdens imposed upon Uncle Sam's husbandmen, costing them at least $40,000,000 each year.

Another reason why milk causes sickness is the fact that, of all foodstuffs, it is the most difficult to obtain, handle, transport and deliver in a clean condition. An orange, a banana or a peach may have traveled several thousands of miles and have been exposed to many sources of contamination. Yet it will arrive in your kitchen practically sterile, sealed against germs and dust and dirt. A string bean, a potato or a carrot has been grown in "dirt" itself; it will be washed and cooked, however, before it reaches your plate. But you cannot buy milk in the original container, the cow, or wash it before it is consumed.

*A carrier of milk may also be a carrier of infectious disease.*

There are many ways for unclean matter to enter milk. The anatomical position of the cow's udder itself is not a fortunate one from a sanitary standpoint. Unless it is washed before every milking, all kinds of dirt and dust must of necessity drop into the pail. The milker, even with the best intentions in the world, sometimes forgets to wash his hands. Milking-machines and pasteurizers, though marvelously sanitary inventions in theory, are dirt-catchers and germ-conveyors in practice unless thoroughly washed and actually sterilized immediately after each use. Pails, cans and bottles are difficult to clean properly and to keep clean until again needed. Samples taken in our laboratory of washings from so-called "sterilized" bottles gave official plate counts of from 500 to 50,000 colonies per cubic centimeter (a small thimbleful). By the time otherwise clean milk had been transported in such bottles under ordinary conditions, the counts would have multiplied many times.

### *Hard Task to Keep Milk Sanitary*

Any one who believes it is an easy job to produce, handle and distribute clean milk should try it. Farmers and dealers, like the rest of us, are neither infallible nor blameless. Some of them, it is true, handle their precious product in a filthy way, but many of them are conscientiously trying to serve their customers a safe food.

Another reason why this life-giving fluid causes sickness is that it is the most readily decomposable of all foodstuffs. Stale milk, many times not detectable, causes various kinds of unclassified intestinal disturbances among adults. Babies, however, constitute the largest number of victims. Cases of gastro-intestinal diseases of infants are many times more numerous among the bottle-fed than the breast-fed. There are other factors that enter into this proportion but stale, dirty or infected milk plays the major rôle. The conclusion that cleaner, purer milk supplies result in lower infant mortality rates can be as definitely shown graphically as that two and two make four can be shown arithmetically.

The customer is to blame as much or more for sickness caused by decomposed milk as are producer and dealer. Many householders do not keep milk clean and cold after delivery and some expect to save it too long a time. It is better to buy it in small quantities every day—particularly for babies or children. Some adult tummies seem to be able to withstand almost any harm, but a baby's digestive organs are exceedingly delicate things.

Milk, being the nearest to perfection of all foods but of the greatest potential danger, is one of the biggest problems if not the biggest problem of health departments whose duty it is to protect the public health. But there are many obstacles confronting health authorities in the enforcement of sanitary laws. The most formidable one is doubtless politics.

### *The Health Officer and Politics*

Under most forms of city government health officers or commissioners, who are the chief executives of health departments, are appointed by mayors or elected by boards of health. The term of office is relatively short and uncertain at the best. A physician cannot afford, professionally or financially, to give up his entire practice for a job that is here today but gone tomorrow in case he steps on somebody's toes. If he excludes from sale some dealer's milk, even for the best reason in the world, and that dealer happens to be a friend of an unscrupulous but influential politician, the health officer is placed in a precarious position. If the politician cannot do otherwise, it will occur to him to cut down the health department's appropriations. Except in rare instances, public health budgets are the last insignificant crumbs off the loaf of municipal appropriations.

The lack of cooperation with health departments is often indifference or heedlessness. The

science of disease prevention has made such rapid strides during the last decade that some health departments themselves have not kept step, not to mention other officials.

It is not so long ago that boards of health did not function to any extent until after epidemics had spread disastrously. Now their efforts are directed toward preventing disease. And, because extensive and explosive outbreaks are becoming less and less common, people who do not understand the reason therefor have the notion there is less work to be done. Actually there is more—vastly more.

### *The Cost of Health Protection*

If your health department is functioning properly, its work in milk control alone is worth $5 per capita annually. Very likely, its entire budget for all activities is not more than $2 per capita and is probably less. Compare, or contrast rather, the cost of fire and police protection, education or street improvements, for instance, in your town with the cost of public health protection. Which is the most important?

In addition to the obstacles of politics and lack of adequate funds, health departments usually have to confront and surmount a blank wall of indifference on the part of the public. The enforcement of health laws is, always has been and always will be more a matter of public opinion and demand than of police power.

How can a health officer persuade or force milk producers and dealers to comply with the laws regarding their product if the public is not behind him? If you do not care what your dealer's milk counts are or how his producers measure up to standards, and will continue to purchase milk from him regardless, how can your health department's work be effective?

### *Your Moral Obligation*

Help put the health officer and his inspectors in a position to say, "The people in this town don't want poor milk. They're afraid of it—afraid of the diseases it conveys and spreads. They are willing to pay the price if they know it is safe, but don't try to hoodwink them into buying poor milk for they know better in this day and age." One dry prohibition officer in a town cannot make it dry. Neither can a health department, without public opinion strengthening its position, put a town on the map for clean, safe milk.

There is a moral obligation on the part of every member of a community to assist concretely in protection against the sale of dangerous milk. And it is just as much an obligation to your own physical well-being to drink plenty of milk. There is not to be bought a more nourishing and complete food and it is cheap even at present prices.

Communities may come and go. Some of them are grievously but needlessly depleted every now and then by milk-borne epidemics. Some of them are notably healthy ones built upon proper nourishment the fundamental of which is milk. It is up to you which kind of community yours is.

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# Report Shows Increasing Use of Hospitals

THE ninth annual compilation of statistics concerning hospitals of the United States has just been published in *The Journal* of the American Medical Association. Through its Council on Medical Education and Hospitals the Association has been concerned with hospitals that provide teaching for interns ever since 1905. In 1920 this Council began the supervision of all hospitals.

In 1928 the Council began the publication of an exhaustive list of hospitals approved for the general care of patients after inspection by special investigators from the headquarters of the American Medical Association. In addition, the list, now known as the Hospital Register, has been checked and approved by the medical societies of the counties in which the hospitals are located.

There are now 6,665 hospitals, each having a staff of competent and reputable physicians, included in this Register. Particular efforts have been made to omit any which from definite information were deemed unworthy of being included, *The Journal* states editorially. Inclusion in the Register indicates that evidence of irregular or unsafe practices has not been available to the Council.

The total capacity of all hospitals and sanatoriums in the United States is now 907,133 beds and 47,939 bassinets. The average number of patients constantly using these beds last year was 726,766, not including 621,896 new-born infants, cared for in the bassinets.

A challenging situation is revealed by the figures on nervous and mental hospitals, *The Journal* points out. These institutions are increasing much faster than all other types of hospital combined. Within the last two years the average number of patients in them has grown from 349,667 to 395,407. If the present rate continues, and there is no apparent reason for thinking it will not, by 1934 we shall have more than one-half million persons in our nervous and mental institutions.

# A MODEL MEAL

By Grace M. Ellis

"Ho, hum! We have bananas
But why need they be so mean?
There's just this dab of milk on mine;
The rest of them have cream."

"I hear our mother telling Rob
He's thin as he can be;
She wishes he would eat his meals
And drink his *milk—like me.*"

"That last gulp nearly cut my wind;
If mother sees she'll scold,
But Rob needs *me* to show him up
And, shame, *he's six years old.*"

"Dad's biscuit can't be hard as this;
Just watch him munch it down.
They've toasted mine and dried it
In the oven, I'll be bound."

"This bread and jam I seldom get
Excepting as a treat,
But mother says I simply *must*
Show Robbie how to eat."

"I *thought* I'd get this apple,
For I've still a bit of room.
I really think I'll manage now
Without *much* else till noon."

# The Animals Protest

*A One Act Play* — *By Louise Porter*

CHARACTERS

THE HUNTER — THE FARMER
THE SHEIK — THREE EMMA WILLARD GIRLS

SCENE: Emma Willard School.

TIME: Now.

*(Enter the Hunter, Sheik and Farmer, one by one. After looking cautiously around, they crouch at one side of the stage.)*

*(Enter the three Emma Willard girls, who have their heads thrust forward, hunched shoulders, and protruding shoulder blades. Hunter, Sheik and Farmer stare incredulously.)*

HUNTER *(rising)*:
The thing I did not think could be

SHEIK *(rising)*:
Before my very eyes I see

FARMER *(rising)*:
Not only one of it, but three!

*(The girls appear chagrined.)*

FIRST GIRL:
Why are you staring thus at us?

SECOND GIRL:
Why make you such a fuss o'er us?

THIRD GIRL:
Is it our uniforms and shoes
At which you laugh with loud halloos?

*"Our humps are quite the style."*

HUNTER:
That we are staring is quite true,

SHEIK:
And also that we stare at you,

FARMER:
But neither uniform nor shoe
Inspires this interest scientific.

ALL:
Shall we speak in terms specific?

FIRST GIRL:
By all means, yes!

SECOND GIRL:
Though we confess,

THIRD GIRL:
We think you are most mannerless.

HUNTER:
I will elucidate. My name
I shan't reveal, but that I came
From Africa, where some slight fame
Is mine, for there I hunt big game.
Not long ago
Beside the Niger,
As I laid low
The lion and tiger,
And the wild gorilla,
To my astonishment was seen,

Accosting me with friendly mien,
A strangely mild gorilla—
That did not tear me limb from limb
When in the jungle shadows dim
I carelessly bumped into him.
And when I gasped,
And would have fled,
My arm he grasped,
And gently said,
"Nay, hunter, let your fear abate;
For though you've cruelly slaughtered eight
Of my relations, you shall not
Be hurt if you accomplish what
I ask. The Jungle folk have heard
It told by many a passing bird
That in your far-off native land
There dwells at Troy, New York, a band
Of youthful female humans, and
That some there are who, when they stand,
Their shoulders hunch, and forward bring,
And let their arms all loosely swing—
A posture which we thought confined
To us of the Gorilla kind.
It has been ours for countless years,
So these young humans, it appears,
Are most presumptuously daring
To copy our especial bearing!
Unless they are our blood relations,
We tolerate no imitations.
Therefore, Hunter, quickly go
To Troy, New York, and tell them so!"
Thus I was admonished by the hairy creature,
And I stood astonished, for I could not feature
Any human beings like gorillas standing.
So I came here, less to do the beast's commanding
Than to see myself this strange phenomenon.
And I now behold it. Ladies, I have done.

*Such posture's quite becoming to a goose.*

SHEIK:

Now by the prophet's beard,
Sir Hunter, what you tell
Is strange, yea, passing weird;
But I can match it well.
The wide Sahara is my home,
For I'm an Arab, gentle Misses:
O'er the desert sands I roam,
And stop at verdant oases.
Now in the desert lands one carries
Merchandise on dromedaries;
Which is a certain kind of mammal,
Or, more specific'ly of camel.
'Tis not a very lovely creature,
And it has a hump, which feature
Obviously must be meant
For use and not for ornament.
And all the camel tribe
For this distortion famed
Is used to taunt and gibe
And of its hump ashamed.
Or so I had surmised, until a recent date,
When I was much surprised

*"Wherefore I sold outright all my harem's pearls."*

*"Not long ago beside the Niger, I laid low the lion and tiger."*

*"Mr. Sheik, I swan, I ain't never gazed upon sich posture."*

To hear a camel state:
"Our humps are quite the style;
Believe it, sir, or no!"
I couldn't help but smile,
And answered, "Is that so?"
But replied the beast
With proud reproachful mien:
"'Tis true that in the East
These humps are only seen
On camels, but afar
There lies a western land
Where wondrous customs are;
And maidens, when they stand,
Have humps upon their back;
From us they learned that knack!"
When the dromedary
Had recounted this,
I could no longer tarry;
I did not want to miss
So wonderful a sight
As that of camel girls,
Wherefore I sold outright
All my harem's pearls,
And with the proceeds paid
My way as far as here,
Where I beheld a maid,
In fact, three maids, appear,
All having humps like those
That dromedaries wear.
Without them, Allah knows,
You would be passing fair,
But since you *have* that pose,
What can I do but stare?

FARMER:
Mr. Sheik, you're right, I swan,
For I ain't never gazed upon
Sich posture. As for why I'm here,
I came with much the same idear
As you did, but I am by trade
A poultry raiser, and have made
A heap on geese and chickens.
The other day I sez, "Now, why
Are them geese squawkin' like the dickens?
I have to go and see," sez I,
And you can't guess what I found out
That them thar geese was riled about;
They'd heard some girls down here in Troy
Had started in for to employ
That posture of the head and neck
Which you girls have, and which, by heck,
Is quite becoming to a goose,
But was not meant for human use.
And blessed if them there squawkin' geese
Would let me have a bit o' peace.
Without I'd come to Troy to see
If what they'd heard was true—
That in the world there really be
Such funny folks as you!

*"Unless they are our blood relations, we tolerate no imitations."*

FIRST GIRL:
Sirs, we are overwhelmed with shame!
SECOND GIRL:
And know that we deserve much blame,
THIRD GIRL:
For that we have such far-flung fame
FIRST GIRL:
As imitators of gorillas!
SECOND GIRL:
Dromedaries!
THIRD GIRL:
Geese!
FIRST GIRL *(straightening):*
But we'll reform!
SECOND GIRL *(straightening):*
And change!
THIRD GIRL *(straightening):*
And cease!
ALL:
Those brutish postures we'll debar
And stand like humans, which we are!

[*Curtain*]

# New Books *on* Health

*Reviewed by*
*Morris Fishbein, M.D.*
*and Others*

## FOUNDATIONS OF MENTAL HEALTH

By Leonardo Bianchi. Cloth. Price, $2.50. Pp. 273. D. Appleton and Company, New York, 1930.

MENTAL health is the first essential to a well ordered and complete life. The prime purpose of this book is to develop the principles of eugenics and mental hygiene, particularly as a means of combating racial degeneration due, in part, to the commercial and political overgrowth which becomes a menace in man's chase for wealth and pleasure.

Dr. Bianchi, late of the Royal University of Naples, has brought out many interesting points of view: That Parisian and London families rarely live beyond five generations, and that urbanism diminishes the vitality of the race; that acquired characteristics are transmitted; and that North American legislative measures against liquor have no scientific basis and do not draw their clues from experience or from human history. The relation of physical, sex and religious education to mental hygiene further commands the interest of the scientist as well as the general reader.

The book is a scientific, philosophical consideration and appeals naturally to advanced readers only.

## THE HEALTH-CARE OF THE BABY

By Louis Fischer, M.D. Cloth. Price, $1. Pp. 248. Funk and Wagnalls Company, New York, 1929.

THIS is a standard nursery handbook and feeding guide. It incorporates the newer teachings in diet, the use of the ultraviolet rays and vitaglass in the treatment of rickets and for the building of general resistance. In addition to instructions for feeding healthy children are given the most successful new methods for feeding sick children.

The book is intended to be a first aid book in accidental emergencies, and it also guides the mother in regard to weight disturbances, skin diseases and the common diseases. The sensible hygienic routine for each day covers airing, breathing, clothing and diet. Of particular interest in this new edition—the eighteenth—are statements concerning foot deformities, the importance of prevention of diphtheria, and the care of the teeth. For many years mothers have successfully followed the easily understood material in this volume.

## THE DEEPER MEANING OF PHYSICAL EDUCATION

By Dr. Eugen Matthias. Translated by Carl L. Schrader. Cloth. Pp. 88. Price, $1. A. S. Barnes & Co., New York, 1929.

IN THIS small book, Dr. Matthias, professor of the biology of physical education at the University of Munich, emphasizes basic values in physical education. Physical education, as he treats it, brings both physiologic and psychic reactions. Joy resulting from physical activity is a matter of individual differences, each person naturally seeking the form of activity that nets him the greatest enjoyment. Because of this fact, attempt should be made to satisfy individual preference through varied activities.

A large part of the book deals with child growth, and the great need of meeting varying stages of growth with activity adapted to the age level. Some of the author's comments on the physical and mental aspects of the child at puberty are of especial interest.

The last few pages, which discuss the value of different systems of physical activity, suggest somewhat the foreign attitude toward physical education.

The book should interest the general teacher as well as the physical educator.

## GOOD TIMES FOR ALL TIMES

By Nina B. Lambkin. Price, $4. Pp. 377. Samuel French, New York, 1929.

WHOLESOME recreation is one of the fundamentals for good physical and mental health. The carrying out of a program of entertainment requires leadership. How many times those responsible for managing entertainment in home, school, church, lodge or community crave help in such undertakings. Miss Lambkin in her practical book entitled "Good Times for All Times" has rendered a distinct service for those who wish to guide programs of entertainment. It tells the reader concretely what to do, when to do it, and how to do it, in a language that everybody can understand.

The book is really a cyclopedia of entertainment which describes accurately nearly every conceivable game, stunt, ceremony and program. It tells the reader just how a program may be worked out, the committees that need to be appointed and the work of each. There are helpful bibliographies and references to materials with the names and addresses of publishers or manufacturers.

## THE SCIENCE OF NUTRITION

Simplified by D. D. Rosewarne. Pp. 314. Illustrated. C. V. Mosby Company, St. Louis, 1929. Made and printed in Great Britain.

RAPID strides have been made in the last few decades in the field of nutrition, and there have accumulated in this development so many new terms and processes that the average person is completely lost when he tries to understand much of the present day discussion on the subject.

Happily, this author has set out to provide the ordinary person with a simple statement of everything necessary for a proper understanding of questions of diet. One of the most commendable parts of this work consists of carefully prepared, simple statements of the objectives of dietetics, the functions of food, the chemical processes of nutrition, the physiology of digestion and absorption, the methods of procedure in determining food values, the meaning of the calorie and systems of measurement.

In Part II the discussion is confined to the food requirements of the organism—the protein requirements, both as to quality and quantity; the fuel (carbohydrate and fat) requirements, the mineral requirements, the vitamin requirements and the physiologic functions of oxygen.

Part III concerns the sources of the food elements and the value they have in the dietary. In the section on diet the arrangement of dietaries, calculation of diets, the building of special dietaries for childhood, pregnancy, lactation, middle and old age and obesity are discussed. At the conclusion is a table of food values which gives the name of the food substance, the protein, carbohydrate, fat and ash content, and the vitamin and mineral content.

# HEALTH *and the* SCHOOL

*Edited by*
*J. Mace Andress, Ph.D.*
*67 Clyde Street, Newtonville, Mass.*

## *Center Your Health Teaching Around the Vacation Idea*

VACATION will soon be with us. The vast army of school children will be leaving their books behind them and entering a promised land of play, travel, work and adventure. In some homes the children have even now begun to count the days until the vacation begins. Some boys and girls in happy anticipation have marked their calendars so that they can tell at a glance just how many days intervene.

This interest on the part of the children is shared by the community and nation as a whole. Every year more and more families think of the vacation as a necessary part of their recreational program for the year. It may be an automobile trip across the country, a week or two on a farm, or a longer sojourn at seashore or mountainside. Many travel in foreign countries. This year more than 500,000 Americans will visit Europe. History devotes considerable space to the great armies of Teutons that threatened and finally conquered the Roman empire, but few of them were probably as large as the vast horde of Americans that will inundate Europe during the summer. As the days go by there will be more and more conversation in the home about the summer vacation. Newspaper articles, advertisements, store windows and magazines will call our attention with increasing vividness to this great adventure of the year.

There are at least two reasons why it seems desirable for the teacher to center some of her health teaching around the idea of the summer vacation.

First, there is real need of health instruction to safeguard the vacation so that it may be a healthful and happy time. Every vacationist is subject to more dangers under the trying and uncertain conditions that may present themselves than he would be at home. There are the common dangers incident to traveling on the highways, trains, boats and on foot. To meet such situations pupils should be trained in the fundamental principles of safety. When accidents occur, they should know the proper things to do. This means careful training for emergencies. The vacation seeker, since he comes in contact with so many people and since he must get his water, milk, general supplies and often his meals in places that are questionable from a health point of view, needs to know a good deal about personal and community hygiene. Teaching the hygiene of the vacation, then, has a practical significance.

A second reason for centering the health instruction around the vacation idea for the next few weeks is the extraordinary opportunity that is offered to teach almost any phase of health in a favorable emotional setting. Some of the important health activities like cleaning the teeth, general cleanliness and safety are not very interesting when the bare facts alone are taught. One of the difficult things to get in teaching any subject is a hospitable attitude on the part of the pupil toward the facts or habits to be taught. The rest of it is comparatively easy if the teacher possesses a minimum of common sense and ingenuity. Everybody not only enjoys a vacation but he enjoys it in anticipation and imagination. When both pupils and community are thinking, imagining and planning their vacations it is the strategic time to associate this interest with health teaching.

Not long ago I walked along the street with one of my little friends who is in junior high school. Her name is Sally.

"Do you think I ought not to drink milk unless it is pasteurized while I am in Italy?" she asked in a serious grown-up tone.

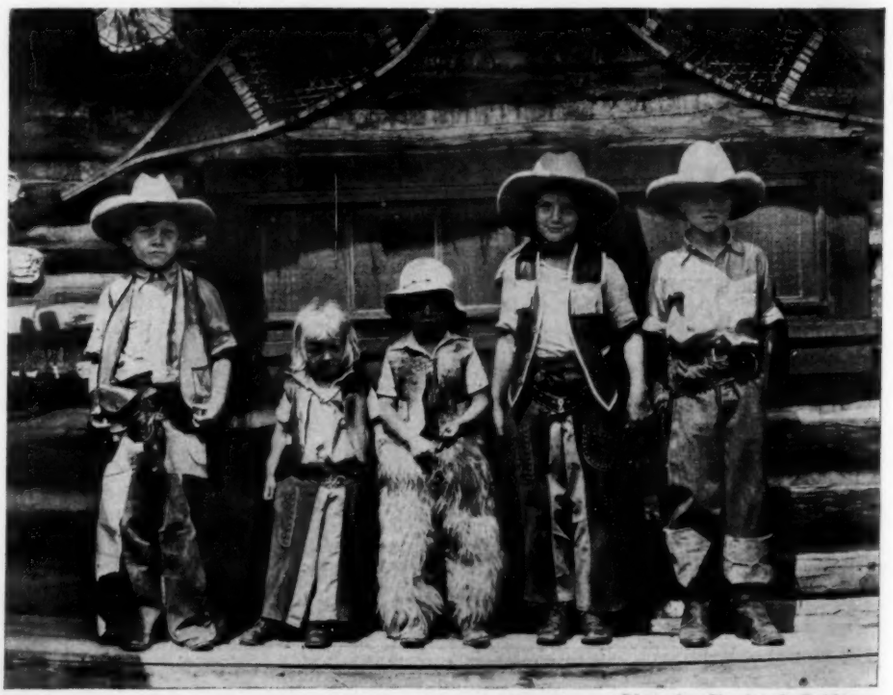

*Photo by Charles J. Belden*

***Some of your pupils may be planning to spend their vacation on a ranch. They would find this quintet of robust Westerners for playmates at Pitchfork, Wyoming.***

Knowing that financially she was in no position to take such a trip, I exclaimed with surprise, "Italy! Are you really going to Italy?"

"Oh, no, not really," she replied, "but we are taking imaginary trips in our geography class. You know it all seems quite real," she said with a sparkle in her eye. "I am planning to sail from New York on June 19 on the North German Lloyd line. We shall be on the ocean eight days and land at Cherbourg, France. The tourist agency on Washington Street, Boston, advises us to take an express at Cherbourg and go immediately to Italy. By doing that we shall get there before the tourist crowd. Won't it be fun? I understand the young people have a good time dancing and that there are many games played on the deck."

"How do you plan to return to America?" I inquired.

"We shall return tourist class on the *Scythia.* Going over we expect to sail first class. It will be fun to have both kinds of experience. But," she added with a business-like crispness, "I am especially interested in planning the trip so we shall not get sick but be in good health to enjoy all these foreign lands. You haven't answered my question about the pasteurized milk. Would it be safe in Italy to drink unpasteurized milk? Then I want to know about the drinking water. Is it true that the water in Germany is not fit to drink? Some travelers recommend bottled mineral waters for those who do not care to drink wine. Isn't it true that pure mineral water might be bottled under insanitary conditions and so be dangerous? Do you think that tourists should be inoculated against typhoid?"

I found myself bombarded by some excellent questions on health, some of which I could answer and others of which I could not. Among the subjects she wanted discussed were the following: What kind of clothing is needed on the boat? Is seasickness dangerous? May it be prevented? Are tourists subject to colds during the summer time? Is inoculation against colds advisable? What inoculations are desirable? Are there any diseases in Italy not usually found in America? What medicines should the tourist carry for emergencies? What first aid kit would you recommend? Can you tell a good restaurant when you see it? Should the tourist's diet differ in essentials from what it should be at home?

Just as we were about to part I asked my little friend what she had in her hand.

"That's a menu card of the *Berlin,* the ship we sail on. I am going up to the home economics teacher to get her to help me plan some good meals. She has been abroad. That helps a lot. Goodbye."

Isn't Sally's enthusiasm contagious? Doesn't it leave you with an itching desire to try out the vacation idea with your class? Can you capitalize this universal interest in the vacation at this time of year so that it will promote wholesome attitudes, knowledge of hygiene and healthy living?

Photo by Charles J. Belden

*An interesting vacation experience — feeding two motherless young antelope.*

## TEACHING HEALTH

*(In this column will be published each month concrete examples of good health teaching. Teachers are invited to send in contributions not exceeding 600 words and preferably less to the editor of this department. Illustrations of the actual work of children will be welcomed. Contributions accepted will be paid for but no manuscripts will be returned.)*

## A HOT LUNCH PROJECT IN THE SIXTH GRADE

MY SIXTH grade class in hygiene had been studying foods and had made booklets and posters to show the value of vegetables, fruit and milk. As most of them brought lunches, it was suggested that we divide our class of thirty into five groups and have one group responsible for a hot luncheon each day for a week. The girls were most enthusiastic.

Each group chose a day to serve luncheon. They planned a menu, then purchased and prepared the meal. We sold tickets for 15 cents the preceding day and thus knew how many we were to serve so that we could buy economically.

After each group finished its luncheon, the girls made a cooperative poster on tag board. On this poster they pasted pictures of the food they served, wrote stories of how they purchased and prepared it and gave a financial account.

For the entire five days a profit of $2.79 was realized, but far more valuable than the financial returns were the lessons in planning, buying, cooking and preparing an attractive table. The mothers, too, were pleased that their children could purchase a hot, well cooked lunch at school.

The following were the menus served:

Monday
- Cream of tomato soup
- Lettuce sandwiches
- Baked apple and cream

Tuesday
- Baked potato
- Cream gravy
- Peanut butter sandwiches
- Plain cup cakes

Wednesday
- Vegetable soup
- Johnny cake
- Apple sauce

Thursday
- Bran muffins
- Hot chocolate
- Raisin cookies

Friday
- Creamed potatoes
- Nut bread sandwiches
- Plain custard

MARGARET LEE FRAIN,
McKinley School,
Battle Creek, Mich.

## CLEAN-UP CAMPAIGN IN DAVID LIPSCOMB COLLEGE

A CLEAN-UP campaign is carried on every spring at David, Lipscomb College, Nashville, Tenn. It has become somewhat of a tradition in the school, and to the students it is much like a game.

David Lipscomb College is a junior college with a high school department and the grammar grades. It is coeducational and maintains dormitories for boys and girls and a community dining hall. The total enrolment is about 350. High school students have the privilege of associating with college students on the campus and in the dining hall. They also have the advantage of associating with college students in many of the social functions of the college.

The clean-up campaign enlists every teacher and student of the institution. All classes are suspended for the day. The students are organized into committees and captains lead the different groups; among them there is wholesome rivalry. The work is distributed in such a way that there is no waste of time through one group interfering with the work of another. One student crew will be assigned the washing of windows on one side of the administration building, another group will take another set of windows and so on, until all the windows of all the buildings have been cleaned. Others are assigned to cleaning up the campus. The hardwood floors of the halls, recitation rooms and rooms in the dormitories are cleansed and waxed.

The forenoon is given to the work of cleaning the buildings and grounds and the afternoon to cleaning the private rooms in each of the three dormitories. Each student sets in order his own room and an hour is given late in the afternoon for inspection of rooms. A committee of girls is selected to give first, second and third prizes to the neatest rooms in the boys' dormitory, while a committee of boys is selected to give awards to the neatest rooms in the girls' dormitories.

After the committees have awarded the prizes the halls and rooms are opened for public inspection and the entire faculty and student body observe the different rooms. The young men get to see the girls' rooms and girl students get to see the rooms of the young men, thus encouraging personal interest and pride. All are urged to keep their rooms as orderly every day as they are on this notable day. A second general inspection of rooms is made about a month after the clean-up campaign.

Many valuable lessons are to be gained from this campaign. Students find out that it is hard work for the janitor to pick up bits of paper that have been thrown on the floors and campus. They learn that it is a part of life's lessons to be neat and orderly, and they develop greater respect for the property of the college and they love it more.

LEO BOLES,
Nashville, Tenn.

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## A SCRAP BOOK ON HEALTH NEWS

TO STIMULATE an interest in health in intermediate and grammar grades, I have several times suggested that the pupils keep a scrap book of health news. Always it has been a delightful project for them.

The books made were loose leaf scrap books 10 by 12 inches or 12 by 14 inches with stiff covers and pages of wrapping paper or light weight manila paper. A loose leaf book was used so that new pages could be added under various subjects and the unused leaves removed. Thus the books were complete at the end of the school year. The pages were not numbered until the book was finished. The table of contents was arranged at first or when the work was complete.

For easy reference the clippings were mounted in chapters or under various headings. The chapter titles usually chosen were: diet, cleanliness, exercise, disease, tobacco, alcohol, first aid, safety. Sometimes the pupils wished to use the same titles as those in their hygiene texts.

The designing of suitable covers for the books was eagerly done. One class chose a cover page with the title in the center and a border of health scenes in freehand drawings around the page. Another used a colorful cover in freehand paper cutting, showing a news boy with his papers. The papers for sale bore the title "Health's Daily News."

Some of the clippings collected pertained to new food values discovered, the need for pasteurization of milk and butter, results of a famine and food shortage in a foreign country, an epidemic caused by a typhoid carrier, Stefansson's meat diet, a quarantine of passengers on a Pacific coast steamer following a case of meningitis aboard, the clean-up campaign of one town, sickness from polluted water, poor facilities for baths in some European countries, how to protect one's health when traveling, new athletic records, pictures of athletes, training for athletic contests, new games, new preventive measures against disease, what vaccination has done toward stamping out smallpox, new germs isolated, news of health research expeditions and institutes.

The pupils must be taught to consider the source and authenticity of medical discoveries and to select the most desirable material for their books. Care should be taken to make it a book of news and not a collection of horrors. It must be newsy and not morbid in order to obtain any health education from the project.

MRS. R. M. WHITE,
Lake Minchumina,
Nenana, Alaska.

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## WAR ON FLIES!

Kill a fly in spring, you've done a splendid thing.
Kill a fly in May, you've kept thousands away.
Kill a fly in June, they'll be scarcer soon.
Kill one in July, you've killed just one fly.

WITH spring upon us and with the promise of a summer's warm days of open windows and doors, there looms one ugly pest—the house fly.

Flies swarmed in such numbers at our school that the tops of the children's milk bottles were almost out of sight. It was disgusting. We had been reading "Boys and Girls of Wake-Up Town" and part of the children's animosity had been awakened by the pictures of the flies around garbage pails.

Covering the milk with clean, white towels did not banish the flies from sight. Poisoned fly paper was not effective. The children brought their lunches to school and that only enticed them more.

One day, late in spring, war was declared. Each child came to school armed with a bundle of newspapers. These were rolled up into fly-swatters. The class of twenty-eight was divided into two armies for a ten minute battle. It was against the rules to hit flies on the window panes. Each warrior's victims were to be placed on a piece of paper on his own desk. At a given signal the war began. Blows fell fast and furiously. Nearly every hit was a fatality. Time!

A list of the dead and wounded was made and the result was as follows:

| | |
|---|---|
| Army A | 139 flies |
| Army B | 246 flies |
| Total | 385 flies |

The vanquished were swept into a dustpan, and to our surprise it was nearly full. The two boys with the highest scores had the privilege of burning the dead flies in the school incinerator, while the rest of the children went out to wash their hands. Our fly worries were over for that season.

MARY T. MARCH,
Port Chester, N. Y.

## NEW HEALTH BOOKS AND TEACHERS' MATERIALS

A NEW manual called "Experiments in Health"[1] is intended primarily to accompany the author's text "Science and the Way to Health" and "Health Essentials," by Andress, Aldinger and Goldberger, although it may be used with any descriptive text adapted for junior or senior high school. The authors believe that high school pupils should begin to get a scientific attitude toward health and that such an attitude can be gained only by doing and discovering things through scientific methods. With this outcome in mind they have selected with care about one hundred experiments in health that have been tried out in actual school practice.

DR. S. WEIR NEWMAYER and Dr. E. C. Broome in their new Health and Happiness Series[2] have made a worth while addition to the growing literature on health education.

In the material for the lower grades the approach is by means of health plays and stories. In the upper grades the presentation of facts is more formal, through physiology and anatomy. The illustrations are not especially clear, accurate or attractive. On page 185 of "Health Habits," for example, the figures on poor posture and good posture are so small and vague that they do not present clear ideas. In a book with so many modern ideas it is odd to see two full pages devoted to colored illustrations with the names of the important muscles such as *latissimus dorsi* made very prominent.

THE first step toward getting results in any school is to have clear-cut aims. Next there should be careful plans for realizing these aims. Probably the weakest place in our health education program today is in the high school. In most cases the health work is inadequate as contrasted with that in the lower grades. Often good work lacks organization and cooperation is lacking among different departments of the school.

The Chaffey Union High School, Ontario, California, has worked out under the direction of Harriet L. Fleming, R.N., a "Four Year High School Health Program for Girls."[3] It outlines in detail the work to be covered each year, presents lesson plans, suggests methods of teaching and refers to the literature on health available for high school students. The health program necessary for the physical welfare of girls is especially emphasized. This course of study shows a thoughtful consideration of the specific health problems that girls face during the four years of high school.

THE approach to any subject through experimental channels is always valuable when adapted to the capacity of the learner. Dr. Scheidemann has succeeded in preparing a valuable book, "Experiments in General Psychology,"[4] as a guide for beginning students. Some of these experiments could be used in classes in hygiene.

CLEANLINESS INSTITUTE, which has prepared so much valuable literature on health for teachers and children, is fortunate to have on its staff Dr. W. W. Peter, who is not only well trained in the technic of health and medicine but is also a writer of unusual power. His latest story, "The Great East Gate,"[5] with its oriental coloring is an unusual contribution to children's health literature.

It is a story of a beautiful city among the mountains which became rich, comfortable and lazy. The walls began to crumble and the guards on the walls became indolent and careless. Only one person, a dreamer, Shen Shen, was conscious of the danger that threatened in the form of pygmies. His attempts to arouse the people were of no avail and the enemy finally gained access to the city. Sickness and death followed in their wake. In their distress king and people turned to Shen Shen, the dreamer scientist, under whose leadership the foe was driven from the city. The citizens were drilled so well in good habits of discipline that the city recovered its health, trade and ancient prestige. It was a war against an invisible foe. Shen Shen was honored by the nation as its great hero.

Boys and girls in the upper grades and the high school not only need a careful training in the scientific principles relating to health but also health reading that is recreational. For this last purpose "The Great East Gate" should prove valuable.

A COURSE of study[6] from Philadelphia bears every evidence of having been worked out with care and the psychological basis is sound. The aim of instruction in the first three grades is the development and formation of correct habits of living. Strangely enough, the writer's first sentence in this bulletin starts with, "The purpose of the work in physiology and hygiene," although the course for the first three grades contains no physiology and by a general concensus physiology has been banished from the primary grades in our modern schools. Health rather than disease is stressed throughout. Beginning in the fourth grade and continuing through the fifth and sixth, physiology and anatomy receive attention in such a way as to suggest reasons for the formation of the health habits previously emphasized.

The teacher who follows this course of study will have a bulletin that tells her exactly what habits pupils should form and what knowledge they should acquire. It has the virtue of being so clear that it cannot be misunderstood. As compared with other courses of study in health this plan has some rather serious limitations. It is too much of a formal and mechanical outline to give the greatest help to the teachers. It has much on what is to be learned but very little on how it is to be taught. It might well have suggested various approaches in teaching certain topics and the variety of methods available. Although there is now a wealth of children's material in the field of health, much of which can be secured free or at a nominal cost, no reference is made to these sources.

GRACE T. HALLOCK, who has written so many delightful health stories, presents one of her best in a delightful bit of imagination, "The Travels of a Rolled Oat."[7] It is a story that not only naturally gives impetus to the consumption of oatmeal products but also imparts much interesting information. Attractive illustrations and maps add to the teaching value of the story. It is prepared for use as a supplementary reader in health education, geography, agriculture and the industries in the fourth and fifth grades.

CORRECTION.—The vegetable chart published in the April number was erroneously credited to a Duluth school. It was a part of the health education work in the schools of Long Beach, Calif.

1. By J. Mace Andress and Maud A. Brown. Pp. 208. Ginn & Co., Boston, 1929.
2. THE PLAY ROAD TO HEALTH. By S. Weir Newmayer and Edwin C. Broome. Pp. 144. American Book Company, New York, 1928. HEALTH HABITS. By S. Weir Newmayer and Edwin C. Broome. Pp. 207. American Book Company, New York, 1928. THE WAY TO KEEP WELL. By S. Weir Newmayer and Edwin C. Broome. Pp. 264. American Book Company, New York, 1928. THE HUMAN BODY AND ITS CARE. By S. Weir Newmayer and Edwin C. Broome. Pp. 314. American Book Company, New York, 1928.
3. By Harriet L. Fleming. Pp. 95. Chaffey Union High School and the Chaffey Junior College, Ontario, Calif., 1930.
4. By Norma V. Scheidemann. Pp. 108. University of Chicago Press, 1929.
5. By W. W. Peter, M.D., Dr. P.H. Pp. 46. Cleanliness Institute, 45 E. Seventeenth St., New York, 1929.
6. COURSES OF STUDY IN HEALTH EDUCATION. Grades One to Six. Board of Public Education, District of Philadelphia. Pp. 130. 1929.
7. By Grace T. Hallock. Pp. 78. School Health Series. Quaker Oats Company, Chicago, 1930.

# Questions *and* Answers

*If you have a question relating to health, write to "Questions and Answers," HYGEIA, enclosing a two-cent stamp. Questions are submitted to recognized authorities in the several branches of medicine. Diagnoses in individual cases are not attempted nor is treatment prescribed.*

### To Prevent Grinding of Teeth

*To the Editor:*—I should like information regarding the appliance that can be attached to the teeth to prevent grinding at night.

L. F. M., Connecticut.

*Answer.*—We are not familiar with any stock appliances of this kind. The dentist always constructs one to meet the individual needs of the patient. If the inquirer will take this matter up with his dentist we are sure he can construct something that will be serviceable and satisfactory.

### Soft Palate

*To the Editor:*—Is the soft palate a vocal organ? Would its removal affect or alter the speech production? What is its function? W. H. A., Illinois.

*Answer.*—The true vocal organ of the body is the larynx or voice box, in which are situated the vocal cords. The current of air coming from the lungs is set in vibration in the larynx and, depending upon the number of vibrations or movements of the vocal cords per second, the pitch of the tone is determined. The sound as it comes from the larynx is, however, changed by the structures which lie above it; namely, the throat, the palate, the mouth, the tongue and the nasal cavity. Strictly speaking, one could not say that the soft palate is a vocal organ, but on the other hand it is an adjunct to or modifier of it.

The main function of the soft palate during the act of swallowing or speaking is to approach the back wall of the pharynx or throat and to prevent some of the air currents or food from passing upward toward the nose. If there is paralysis or destruction of the soft palate, causing marked shortening thereof so that it does not come close to the back wall of the throat during swallowing, fluids may go upward into the nose and the speech may be altered, a so-called "nasal twang" being produced.

For the proper pronunciation of certain sounds in the English language, especially those of the letters m and n and the combination of ng, it is necessary for the air to pass through the nose, but when the nasal passages are blocked a peculiar twang is present which is so often noted in an acute head cold, at which time persons are likely to say that the patient is talking "through his nose," whereas he is really unable to do so. In a word, the proper function of the soft palate is the modification of the voice sounds and the prevention of the upward passage of foods, especially of fluids, through the nose.

### Infective Possibilities of Money

*To the Editor:*—In seeking information concerning the transference and carrying of germs by money, I have been referred to you. It is necessary for me to have definite knowledge as to the sources of any information used.

P. G. S., Ohio.

*Answer.*—In years past this subject has been investigated from time to time. Park (Money as a Carrier of Disease, Current Literature, May, 1904, p. 547) examined coins that had been handled by diseased persons. Thirty-five pennies were handled by children having diphtheria; six hours later three pennies showed diphtheria bacilli. Streptococci were found on one of seven nickels and on one of four dimes in the same experiment. Coins taken from persons having tuberculosis showed no tubercle bacilli.

Hilditch (A Bacteriological Study of Soiled Paper Money, Popular Science Monthly, August, 1905, p. 157; Bankers Magazine **77**:493, 1908) studied dirty paper money, finding enormous numbers of nonpathogenic bacteria in some instances but failing to find any evidence of disease bacteria. British investigators have had a similar experience (Medical Officer, May 1, 1920).

Ward and Tanner (Bacteria on Subsidiary Coins and Currency, American Journal Medical Sciences, October, 1921, p. 585) could find no evidence that coins spread disease. These authors suggest that the metallic ions of coins have a bactericidal effect.

Attention is called to the fact (Bacteria on Paper Money and Books, The Journal of the American Medical Association, Dec. 9, 1916, p. 1769; and Bacterially Tainted Money, The Journal of the American Medical Association, Nov. 26, 1921, p. 1737) that bank tellers who handle large amounts of money are not especially subject to disease.

### Hawaii for Tuberculosis

*To the Editor:*—I have tuberculosis and have been wondering about the climate of the Hawaiian Islands in regard to my health. Can you advise me about living conditions and about the climate there? L. S., Minnesota.

*Answer.*—The Hawaiian Islands are considered to be most healthful and on account of the equable climate are especially good for tuberculosis. There are tuberculosis sanatoriums near Honolulu and also some up in the mountains not a great distance from Honolulu.

### Yawning

*To the Editor:*—What makes one yawn? A. P., Pennsylvania.

*Answer.*—Even comprehensive texts on physiology fail to discuss this everyday phenomenon. If the act is mentioned at all the author dispatches the matter by a mere description of the act which reaches its culmination in the socially embarrassing, long protracted inspiration. Several investigators have studied the yawn, using all available methods (fluoroscopy and laryngoscopy) for the registration and observation of the various movements and their exact sequence.

The act is seen normally in fatigue or as a result of ennui. Although some persons can yawn voluntarily, the yawn is essentially of subcortical origin—that is, below the brain center for consciousness—for persons in deep coma still yawn and yawn excessively. The "catching" character of the act also points to its involuntary nature, and indicates that it may occur in the absence of fatigue, hunger and ennui.

In lethargic encephalitis (post-influenza), yawning is a prominent sign, as it is also in cases of brain tumor, cerebellar abscess and apoplexy, but the patient is incapable of completing the act with the usual pleasurable sensations that accompany its termination. Mayer believes that this incompleted and, therefore, disagreeable type of yawning denotes an impairment of the brain intimately associated with the sleep center. A disease condition of this center induces yawning, and a person with an impaired center fails to complete the act.

The conjecture is made by one author that yawning, which under normal conditions comprises not only laryngeal, pharyngeal and respiratory activity but also causes contraction of antagonistic groups of skeletal muscles during the stretching of the limbs, is designed to increase the tone of all the bodily musculature in order to insure a proper physiologic state for any emergency (flight or fight), which with the improved general circulation and increased general metabolism as a result of the act insures the self-preservation of the individual.

### Insulin for Gaining Weight

*To the Editor:*—I should like some information about the use of insulin in an attempt to gain weight in a person having no evidence of diabetes. I know something of the value of iron injections in anemia and building up the general health, but have little knowledge of the value of insulin in this connection. Will you give me a comparison of the values of iron and insulin in treating patients who are underweight?

T. N., Pennsylvania.

*Answer.*—Insulin has apparently been used successfully in the treatment of a small number of patients who are nondiabetic, emaciated and have not responded to the dietetic and therapeutic measures usually employed in such conditions. However, there are not sufficient data to justify its general use in the undernourished.

If insulin is used at all in such conditions, the patient should be in a hospital under the care of a physician experienced in the treatment of disordered metabolism and malnutrition. There can be no comparison of the value of iron in anemias and insulin in the metabolism of carbohydrates. Iron is neither potent nor dangerous; insulin is a veritable two-edged sword.

### Changes in Milk Caused by Freezing

*To the Editor:*—Please tell me what change takes place in raw milk when it is frozen. Are its nutritive value, bacterial count, digestibility and physical properties altered appreciably?

F. S., New York.

*Answer.*—Cow's milk begins to freeze at —0.55 C., just below the freezing point of pure water. Freezing commences at the outside; that is to say, the layer of milk nearest the wall of the container. The ice that forms is composed almost entirely of water. Milk solids and fat are pushed toward the center. The central part becomes richer in mineral content and therefore the freezing point is lower toward the center. The central column is much richer in fat near the surface than in lower parts.

The colloidal condition of the casein and the emulsion of the fat are affected more or less in proportion to the length of time the milk is in the frozen condition. Therefore, when frozen milk is melted, the physical condition is permanently changed. The fat is not in perfect emulsion and the casein is in flakes rather than in colloidal condition. This physical change injures the digestibility of melted frozen milk. A small amount of freezing, such as occurs on cold winter days, is not a serious matter, but if milk is frozen artificially for shipment, it suffers materially in digestibility.

There are some other changes in milk, caused by freezing, that are not well understood. Several investigators have found that the acidity is increased. The milk sugar apparently remains unaffected. It is good practice to thaw milk slowly. It is said, although the evidence is not quite conclusive, that thawed frozen milk decomposes more rapidly than unfrozen milk kept at the same temperature.

### Salt Free Bread

*To the Editor:*—I am engaged in the baking business and have been requested to bake salt free bread for certain patients who, it is understood, are subject to Bright's disease or high blood pressure. If you will furnish me with a formula of what constitutes salt free bread, it will be a great favor indeed.

D. C. S., Pennsylvania.

*Answer.*—When bread is made without salt it lacks all appetite appeal. In order to overcome this, the sugar content and the milk content are sometimes increased.

Salt free bread is made by leaving the salt out of the formula and omitting any ingredient that might contain salt. The following formula is used satisfactorily by one baker, or modifications of it can be made:

| | Pounds |
|---|---|
| Flour | 100 |
| Water (approximately) | 60 |
| Yeast | 2 |
| Sugar | 4 |
| Shortening | 3 |
| Sweetened condensed milk (or dried milk 1½ lbs. + and sugar 2 lbs.) | 5 |

The fermentation time is approximately four hours. In this formula it is assumed that the patient may have high carbohydrate and fat.

Recent clinical studies of salt free diet for patients with high blood pressure have seemed to indicate that salt plays little part in vascular hypertension. In an editorial on this subject in a recent issue of *The Journal* of the American Medical Association, the conclusions of two investigators at the medical clinic of the Peter Bent Brigham Hospital, Boston, are discussed.

"The outcome of their experience with the extremely low salt intake advocated for the treatment of hypertension of the blood vessels did not indicate any particular advantage over the older, less rigid restriction. This low salt free diet is, furthermore, difficult to carry out at home, is monotonous and is expensive."

The strictly salt free diet is rarely indicated in treatment of the sick.

### "Holland Rusk"

*To the Editor:*—Can you tell me the number of calories in one slice of "Holland Rusk" manufactured by the National Biscuit Company? It is sweetened toast, but I thought it might be sweetened with saccharin, which I understand is nonfattening.

E. M. G., Maryland.

*Answer.*—We submitted your inquiry about "Holland Rusk" to the office of the manufacturer and the reply is as follows: "The composition of the product Holland Rusk is:

| | |
|---|---|
| Protein | 12.62% |
| Fat | 5.97% |
| Carbohydrates | 73.75% |
| Ash | 1.24% |
| Moisture | 6.42% |
| Calories per pound | 1,850 |
| Calories per slice about | 55 |

The Holland Rusks do not contain saccharin."

The caloric content per pound is stated and the high percentage of carbohydrate would make it more or less a food that would increase the amount of fat. The better way for one to reduce or to keep the weight down is to diminish the total amount of food rather than to restrict the diet too rigidly to a special ingredient.

### Arch Supports

*To the Editor:*—I understand that there is a pneumatic arch support on the market. Can you give me any information about it or tell me where it can be obtained?

M. H., Maryland.

*Answer.*—There is probably such a support, but the value of any apparatus depends upon its suitability to the condition for which it is used. Arch supports in general should be used only on the advice of a physician after the examination of the feet. He should determine the necessity for the support, and the type to be used. The tendency among the best authorities in the field is to get away from the use of special supports by correction of the shoe.

### Duodenal Cap

*To the Editor:*—Can the cap between the stomach and small intestine be operated on if defective, if the condition was present when the person was born?

B. F., New York.

*Answer.*—The duodenal cap, the cap between the stomach and small intestine, is readily accessible to surgical procedure, if the defect is such that the emptying time of the stomach is prolonged. Congenital deformities that do not interfere with stomach function or cause distress are perhaps best left alone. If the deformity causes obstruction, operation may be advised, the usual procedure being to make an opening between the stomach and the intestine (gastro-enterostomy) so that food will pass through the new opening rather than through the deformed duodenum.

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### Tuberculin

*To the Editor:*—Will you please give me information as to what benefit, if any, can be obtained from the injection of tuberculin for tuberculosis? I have had active tuberculosis for the last two years.

J. W. D., Texas.

*Answer.*—Tuberculin is of value in the treatment of tuberculosis under certain limited conditions. It has proved to be of especial value in treatment of tuberculosis of bones, joints and glands in the quiescent stage of the disease.

In tuberculosis of the lungs it should be used only in the absence of fever.

If used in small graduated doses by one experienced in its use in properly selected cases tuberculin is a remedy of value. If used promiscuously in unselected cases by one not familiar with its dangers, it is capable of producing decided harm.

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### Transmission of Tuberculosis

*To the Editor:*—A school teacher is staying in the home where there is a tuberculosis patient. Is there danger of the teacher carrying germs to school, when every precaution is used in the home? Every room in the home is sprayed and mopped with solution of cresol, and the patient uses sputum cups entirely. Disinfectants are used by other members of the family. The teacher never goes into the patient's room after dressing for school and does not nurse the patient.

O. R., Texas.

*Answer.*—The generally accepted view as to the method of the spread of pulmonary tuberculosis is that it is disseminated by bacilli-laden sputum. If a patient expectorates in sputum boxes or into paper napkins and if these are destroyed by burning, the chances of transmitting the disease are almost nil. Furthermore, if the patient in question has his own dishes and his own towels and is careful to wash his hands before and after eating, the possibility of the teacher being a carrier of tubercle bacilli can be disregarded.

A careful tuberculous patient is a safe patient. If in every home precautions were used as are cited in this case, there would be a further decrease in the incidence of pulmonary tuberculosis. This teacher can go about her work without any misgiving either on her part or on the part of the community.

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### Atrophic Rhinitis

*To the Editor:*—I am a young man of 27 and for the past few years have had trouble with my nose and throat. I suffer from continual dryness and bad breath. For the dryness I have used various oils and sprays, prescribed by doctors, and they afford temporary relief. What is most embarrassing to me is the bad breath. It seems to me that I cannot get rid of it. Although I have visited many doctors and clinics I am still in the dark on how to eliminate this odor. It is an obstacle to my progress both in a business way and socially. I am at present attending evening college and hope to study dentistry, but at times I feel like dropping out because of this condition. What would you advise me to do? Is there any cure? For the past year or two my hair has seemed to come out systematically, and I have a small bald spot developing. I massage the hair with my finger tips and sometimes use Glover's Mange Medicine. The hair stops coming out for a few months and then starts again. Is there any connection between this and the nose and throat condition? My stomach is in fairly good condition, although somewhat acid.

T. T., New York.

*Answer.*—It seems pretty evident from the description that the person has atrophic rhinitis, a condition that is not well understood as to its cause and character and is often difficult or impossible to cure. Of course we cannot, in the absence of a personal examination, give an intelligent or worth while opinion. Our best suggestion is that the young man continue under the care of the physician in whom he has the most confidence.

If the young man has a form of nasal trouble that is not curable and cannot be controlled by treatments, it might, indeed, be a serious handicap in dental work in which there is no escape from the rather intimate contact of the dentist with his patient. On the other hand, he might engage in the mechanical and laboratory phases of dentistry without the nasal trouble being a handicap.

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### New Treatments for Diabetes; Epilepsy

*To the Editor:*—1. Have you heard anything about the supposed diabetes cure discovered by C. A. Mills? Is this preparation on the market yet? Two German doctors claim that they have discovered a way of giving insulin by mouth by using a combination of insulin and fellic acid. Dr. Otto Leyton, a famous British specialist and one of the chief physicians of the great London hospital, has a new way of giving insulin by fairly dividing and emulsifying it in castor oil, which is injected subcutaneously. Dr. Leyton is careful about making claims as the time is too short since his experiment began, but he believes he has made several cures. Do you know anything about these three supposed cures or any others? I have had diabetes for fourteen years and I have been using insulin five years. 2. Do you know anything about the epilepsy cure which was discovered by Professor Fitzsimons, director of the Port Elizabeth Museum, South Africa? He makes use of rattle-snake poison and also of the poison from other snakes, which is given hypodermically in the forearms.

D. G. M., Nova Scotia.

*Answer.*—1. Ever since insulin was discovered and has been in use, efforts have been made to find an equivalent of this drug that could be given by mouth. While one preparation tried in some hospitals has, under proper conditions, proved of value and makes it possible to lessen the amount and the frequency of the insulin injections, no preparation has been found that can replace the insulin given by injection into the body. There is on the market no preparation that can be taken by mouth that will act as an adequate substitute for insulin.

The reference to the administration of insulin with castor oil was reported by Leyton in the London *Lancet,* April 13, 1929. This preparation is given by subcutaneous injections, as insulin is ordinarily given, but Leyton believes that with castor oil the insulin gives better results. This observation has not been confirmed to any considerable extent by other scientists.

We have not been able to find any reference in the literature to the administration of insulin with acid.

2. The treatment of epilepsy by snake venom has not established itself as a satisfactory and dependable treatment.